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CORPORATION OF MADRAS



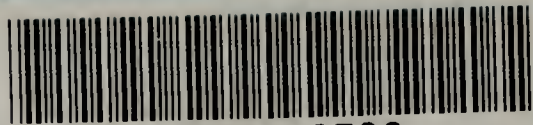
HEALTH DEPARTMENT

ANNUAL REPORT

1952

PRESENTED BY
S. E. D. MASILAMANI, M. B., B. S., B. S. Sc., D. P. H. (Lond.)
HEALTH OFFICER
1953

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With Compliments

S. F. D. Masilamani, M.B.B.S., B.S.Sc., M.P.H. (London)

HEALTH OFFICER

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CORPORATION OF MADRAS

HEALTH DEPARTMENT

ANNUAL REPORT FOR 1952

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INTRODUCTION

I have the honour to present the Annual Report on the Health of the City of Madras for the year 1952.

STATISTICS

Population: The Director General of Health Services estimates the population of the City of Madras at mid 1952 as 14,88,172. The rates mentioned in the body of the report are based on the estimated mid-year population.

Births: The number of live-births registered in the year 1952 was 62,921 and the birth-rate was 42.28 against 58,961 live-births registered in the year 1951 with a birth-rate of 41.11.

Deaths: The number of deaths registered in the year 1952 was 43,207 and the death-rate was 29.03 compared to 42,039 deaths and a death-rate of 29.31 for the year 1951.

Infantile Mortality: The number of deaths of infants under one year was 10,308 and the infantile mortality rate was 163.82 compared to 9,821 infantile deaths and an infantile mortality rate of 166.57 for the year 1951.

Infectious Diseases: During the year under report, the city was comparatively free from epidemics though there had been sporadic cases of Cholera and Small-pox.

HEALTH SERVICES

There was no marked expansion in the health services except the opening of a new allopathic dispensary in the year at Palmyrah Kuppam in the 2nd Division and the provision of ward facilities in the Child Welfare Centre at Kodambakkam. Health Services provided by the Corporation including mother-and-child care have been increasingly availed of by a larger number of people. It may be mentioned that there was greater awareness among the people for medical care particularly specialised services such as care of Mother and Child, diagnosis and treatment of Tuberculosis, Venereal Diseases, Leprosy and the Care of School Children. Consequently, there is greater need for more such services and the present set-up is finding it increasingly difficult to meet the demand.

Ashok Vihar Health & Recreation Centre: The Ashok Vihar Health & Recreation Centre is a pilot scheme on the lines on which Public Health activities should be canalised for promoting the health of the individual with the family as a unit. This scheme has received encomiums from all visitors from all parts of the world. Unfortunately, it has not received the same recognition and support at home. It is our aim to pursue this scheme and to modify it wherever necessary, so that the experience gained thereby may be available for benefitting a larger proportion of the city population.

Medical care of School Children: I wish to draw special attention to the medical care of school children. The number of elementary schools and the number of children receiving free education in them have increased considerably during the past few years. There has been no corresponding increase in the personnel for attending to the medical care of these children and as a result it has not been possible to examine all the children at least once a year. Consequently, a departure was made during the year limiting the medical examination of elementary school children to three stages-at the time of entrance, at the mid-school career and at the school-leaving stage. Medical attention of others was confined only to cases where the need for such attention was brought to the notice of the Medical Inspection staff. Necessary funds should be provided to meet the demand and need.

LABORATORY SERVICES

Laboratory services viz. Public Health Laboratory, Public Analyst's Laboratory, Water Analyst's Laboratory and the Malaria Laboratory continued to meet the increasing demand on them.

From the report of the Public Analyst, it will be seen that the percentage of adulterated samples touched a very high figure. There is no doubt

that more adulterated essential food-stuffs are sold in the city than before. The Public Analyst and I have been, during the past few years, stressing the need, apart from other steps to be taken, for the levy of more deterrent fines.

General : It is gratifying, particularly to me, to note that the Council, at its meeting on 14th July 1953, has accepted the proposal for transferring the work of conserving the city to a separate department with some deviations from the original recommendations made. At long last, conservancy will be looked after by a separate organisation from now onwards. It is, therefore, opportune and necessary to pay my tribute to my predecessors who were responsible for starting and establishing a fairly sound system of cleansing in the city.

As early as in 1916, it was felt that the time had come for this important aspect of environmental sanitation of this city being taken over by the Engineering Department as in other parts of the world. Great emphasis was formerly placed on cleansing services as part of Health Administration based mostly on the theory of the miasmatic origin of diseases. We now know that these services are beneficial to the community only from the aesthetic point of view and have no great public health importance particularly garbage collection and its disposal. Even the theory of communicable diseases being air-borne has undergone violent changes in the light of modern knowledge and elaborate organisation for gaseous fumigation is now of little importance except in its limited value for vermin destruction. It is accepted that when the general level of civilisation of communities has been elevated and improved, less and less of responsibility may be placed on the Health Department for environmental factors. Yet, Health Officers have had very great difficulty in transferring this function to the Department of Works to which it properly belongs.

The city with its hoary past and tradition occupies no mean place among the large cities of the world being about the 50th in rank and the 3rd largest in this country. We should endeavour to keep pace with the progress made by similar and better cities of the world. We should not rest satisfied with what we have achieved so far but should move forward. Though the City may not enjoy all the Public Health amenities provided by cities financially more favourably placed, we have a set-up of various well-established health activities aiming at promoting the health of the mother, infant, child and adult and it is necessary to integrate, consolidate and advance these existing facilities with the single aim of securing better health and happiness.

Public Health is purchasable. Expenditure on public health is a long-term national investment and as Sir George Newman says:

“Public expenditure on national health is like expenditure on a life-boat or a fire-engine; even more, it is like a long-term investment. It yields its interest with absolute certainty, a thousand-fold, but only in the course of years and sometimes in the course of generations. It is money hidden in maternity, in good schools, in pure food, in clean streets, in sanitary houses, in an abundant water supply, in dispensaries, hospitals and sanatoria and in the vast network of a sanitary and protective cordon in every village and city of the land. Its efforts are unappreciated until they are withdrawn. Yet without this investment the nation is bankrupt.”

I wish to record my grateful thanks to Sri C. Narasimham, who was the Commissioner from 1947 to the end of the year under report. During his regime as the Commissioner, there was considerable progress in the activities of the Health Department and he never grudged to give his fullest co-operation in promoting the health of the city. It had been a pleasure to work with him in the administrative details of this Department. I also wish to record my appreciation to my assistants and other members of the Health staff for their continued good work and co-operation and my thanks are due to them.

S. E. D. MASILAMANI, M.B.B.S, B.S.Sc., D.P.H. (Lond).,

Health Officer

FORWARDED

A noteworthy feature of vital statistics of the year under report is the phenomenal increase in the number of births registered. The number of 62,921 births (excluding still-births) is the highest on record. The death-rate, viz. 29.03 per mille, was slightly lower than that for the previous year, viz. 29.31. The infantile mortality rate also showed a decrease viz. 163.82 per 1000 live-births against 166.57 in the previous year. The maternal death-rate of 2.40 per 1000 births is the lowest on record. Infantile mortality is generally taken as an index of the health of a city. It is gratifying to note that the general health conditions of the city have not only been kept up but also improved despite several handicaps.

The city was comparatively free from epidemics during the year, though there were sporadic cases of Cholera and Small-pox.

The existing health services in the city were expanded by the opening of a new allopathic dispensary at Palmyrah Kuppam in the 2nd division and the provision of ward facilities in the child welfare centre at Kodambakkam, during the year. 33 general dispensaries, 8 special clinics and 2 hospitals rendered useful medical relief work to the public during the year.

The poor house, the work house for the able-bodied beggars, the special home for the diseased and the infirm, the homes for the homeless and the orphanage for vagrant children, run by the Corporation, are of immense benefit to the poor and the destitute in the city. But for the existence of these institutions, the number of beggars in the streets and pavement-dwellers would have been still higher. The health and recreation centre, "Ashok Vihar"—the first of its kind in India and the third in the world—continued to work satisfactorily and cater to the health, social and educational needs of poor families living in slums.

Food control was intensified and as many as 5,223 samples were analysed during the year 1952 of which 4,827 were samples analysed under the Madras Prevention of Adulteration Act, 1918. The Corporation Public Health Laboratory continued to be popular. Not only the public but also the medical profession availed themselves of the facilities for clinical, pathological and serological tests provided here. During the year, 33,089 specimens were tested at this laboratory.

The Child Welfare Scheme, which was in independent charge of a Lady Superintendent, was brought under the control of the Health Officer from 1st April 1952. During the year, there were 27 child welfare centres, 3 sub-centres, 18 maternity wards and 3 creches maintained under the child welfare scheme, against 26 child welfare centres, 4 sub-centres, 17 maternity wards and 3 creches in the previous year. Of the total number of births in the city, viz. 62,921 during the year, 32,264 cases came under the care and observation of the child welfare scheme and 13,982 births were conducted in the Corporation maternity wards. Most of the cases were from poor families having an income of less than Rs. 100 per mensem. This clearly indicates the popularity of the scheme. Cow's milk is supplied free to expectant and nursing mothers at the centres at the rate of 4 measures per day per centre. With a view to giving relief to working mothers, the Corporation has made a beginning in starting creches or day nurseries, which are very popular in western countries. The creche not only gives relief to the mothers, but is really a blessing to the children themselves, who cannot otherwise afford to enjoy the facilities and benefits provided there. There are, at present, 5 creches run by the Corporation.

The starting of family planning clinics at three centres, introduction of post-natal clinics and infants' and toddlers' clinics in all the centres in August 1952, and serological examination of blood of all ante-natal cases in two more centres in May 1952 are new features in the services rendered by the Department.

A scheme for re-distribution of centres and opening of maternity homes in various parts of the city with a view to providing maternity service throughout day and night to the public is now under consideration. When it fructifies, the Corporation will be able to be of more help to the expectant and nursing mothers belonging to the poorer sections of the community throughout the city.

The Health Officer, his Assistants and the Lady Superintendent, Child Welfare Scheme, have done good work during the year, as can be seen from the details furnished in the Report of the Health Officer, for the calendar year 1952.

7th September, 1953.

V. N. SUBBARAYAN,
Commissioner.

VITAL STATISTICS

1952

Summary

Area		31900.9920 acres or 49.84 sq. miles
Population as per census of 1951	...	14,16,056
Population estimated (Mid year) 1952	...	14,88,172
Average density per acre	...	46.6
Births excluding still-births	...	62,921
Birth-rate per 1000 of estimated population	...	42.28
Deaths excluding still-births	...	43,207
Death-rate per 1000 of estimated population	...	29.03
Natural increase	...	19,714
Rate of natural increase per 1000 of estimated population	...	13.25
Still-births	...	1,612
Still-birth-rate per 1000 births (live and still)	...	25.00
Infant deaths	...	10,308
Infantile death-rate per 1000 live-births	...	163.82
Maternal deaths	...	155
Maternal death-rate per 1000 live and still births	...	2.40

Deaths from principal causes

Principal causes	Deaths	Death-rate per 1000 of esti- mated population
Cholera	... 160	0.11
Small-pox	... 122	0.08
Dysentery and diarrhoea	... 6,614	4.44
Malaria	... 75	0.05
Enteric fever	... 235	0.16
Tuberculosis including Tubercle of lungs	... 627	0.42
Respiratory diseases	... 10,137	6.81

Public Health of the City of Madras in 1952

The salient features of the state of public health in the city of Madras during 1952 as revealed by the Vital Statistical Records of Births and Deaths may be summarised as follows :—

1. An increase of 11.56 inches of rain-fall over that of the previous year.
2. An increase in the birth-rate from 41.11 in 1951 to 42.28 per mille in 1952.

3. A small decrease in the death-rate from 29.31 in 1951 to 29.03 per mille in 1952, the death-rate during the year, however, being much less than the average rate for the quinquennium.

4. A decrease in the infantile mortality rate from 166.57 in 1951 to 163.82 in 1952.

5. A small decrease in the maternal mortality rate from 2.50 in 1951 to 2.40 in 1952.

6. The mortality from the principal infectious diseases viz., Cholera and small-pox being less than in the previous year.

Vital Statistics

Meteorology: The atmospheric conditions recorded during the year 1952 are furnished in Statement No. 1 in the appendix.

Rainfall: During the year, there was a rain-fall of 42.21 inches against 30.65 inches in the previous year, the average rain-fall for the previous five years being 34.85 inches. The statement below furnishes the rain-fall in the city during each quarter for the last ten years :

Year	1st quarter in inches	2nd quarter in inches	3rd quarter in inches	4th. quarter in inches	Total fall in inches
1942	0.05	3.29	9.00	22.88	35.22
1943	2.73	16.90	11.54	52.88	84.05
1944	12.84	4.08	15.83	45.22	77.97
1945	0.12	6.01	15.63	20.95	42.71
1946	1.51	4.51	15.18	60.92	82.22
1947	5.46	1.41	12.99	14.93	34.79
1948	2.19	1.47	10.98	19.45	34.09
1949	...	12.85	14.94	10.42	38.21
1950	1.26	4.42	18.74	12.09	36.51
1951	0.16	5.42	11.76	13.31	30.65
1952	0.79	16.74	6.49	18.19	42.21

The city had only 6.49 inches of rain-fall during the 3rd quarter of the year which was the lowest on record during the past ten years. There was rain-fall for only 39 days during the year against 51 days in 1951.

Population: The population of the city of Madras with the added areas according to the census of 1951 was 14,16,056. The estimated mid-year population for the year 1952 was 14,88,172. The average density of population per acre is 46.6. In calculating the rates for births, deaths and other causes, the mid-year estimated population has been adopted.

Registration of births and deaths.—Births and deaths occurring in the city are being recorded since 1st April 1868. This is done in 28 registration centres by trained full-time Birth & Death Registration Clerks under the supervision of 10 Medical Officers. Births and deaths occurring in the state hospitals, nursing homes, clinics, and child welfare centres are reported by the respective authorities in the prescribed forms supplied to them. Births and deaths occurring in the residences are reported by the concerned parties themselves at the respective registration centres. Vaccination Inspectors verify all births registered within 7 days from the date of registration. During the year, the Health staff detected 169 un-registered births and deaths and registered them. persons were prosecuted for not registering births and deaths.

Births and Birth-rate: The number of live-births recorded during 1952 was 62,921 (32,334 males and 30,587 females) giving a birth-rate of 42·28 per 1000 of estimated population as compared with 58,961 births against a birth-rate of 41·11 in 1951. The quinquennial average was 47·74.

The proportion of male to females births was 106 to 100 against 104 to 100 in 1951. The number of births and birth-rates recorded in each division are given in the Statement No. II of the appendix to the report.

Seasonal variation of births.—The distribution of births during the different quarters of the year was as follows:—

Quarter	No. of births recorded	Percentage to total births registered
1st	11,355	18·05
2nd	13,834	21·98
3rd	16,944	26·93
4th	20,788	33·04
	<hr/> 62,921 <hr/>	<hr/> 100·00 <hr/>

The largest number of births was recorded in the 4th quarter and the lowest in the 1st quarter as in the previous years.

Births and rates in principal communities.—The number of births and the percentage of births according to the principal communities are shown below :

Community	No. of registered	Percentage to total births registered
European	... 22	0·04
Anglo-Indian	... 301	0·48
Indian Christian	... 2,557	4·06
Muslim	... 5,255	8·35
Hindu	... 54,755	87·05
Others	... 11	0·02
	<hr/> 62,921 <hr/>	<hr/> 100·00 <hr/>

Still-births: During the year, 1,612 still-births were recorded against 1,634 in 1951, giving a rate of 25·00 per 1000 births (alive and still) against 27·71 in the previous year.

Deaths and death-rates: During the year, 43,207 deaths including deaths of non-residents, destitutes and homeless were registered in the city against 42,039 deaths in the previous year. The annual death-rate calculated on the estimated population works out to 29·03 per mille as compared with 29·31 in 1951, the quinquennial average rate being 32·55 per mille. The death-rate recorded during the year under report was the lowest on record since the inclusion of the extended areas in the city.

An excess of 19,714 births over deaths was recorded during the year against 16,922 excess births in 1951. The rate of natural increase works out to 13·25 per mille against 11·80 in 1951.

Seasonal variation.—The distribution of deaths during the four quarters of the year was as follows :

Quarter	No. of deaths registered	Percentage to total deaths
1st	10,634	24.61
2nd	9,574	22.16
3rd	10,581	24.49
4th	12,418	28.74
	<hr/> 43,207 <hr/>	<hr/> 100.00 <hr/>

The number of deaths registered in each division with the death-rates are furnished in the Statement No. IV of the appendix.

Mortality in communities. The principal communities recorded the following deaths and death-rates during the year :

Community	Deaths	Percentage to total deaths
European	... 9	0.03
Anglo-Indian	... 211	0.49
Indian Christian	... 1,840	4.26
Muslim	... 4,422	10.23
Hindu	... 36,709	84.95
Others	... 16	0.04
	<hr/> 43,207 <hr/>	<hr/> 100.00 <hr/>

Sex and age distribution of deaths: Of the total number of deaths registered during the year, 22,158 were among males and 21,049 were among females. There were 105 male deaths for every 100 female deaths as compared with 106 to 100 in the previous year.

Excess of deaths over births recorded in divisions 9 and 28 were due to the deaths among non-residents in the State hospitals i.e. Government Stanley Hospital and Government General Hospital respectively. The specific death-rate of males and females was 30.10 and 28.6 per mille respectively.

The statement below furnishes the number of deaths under the different age-groups with the percentage to the total deaths recorded during the year :

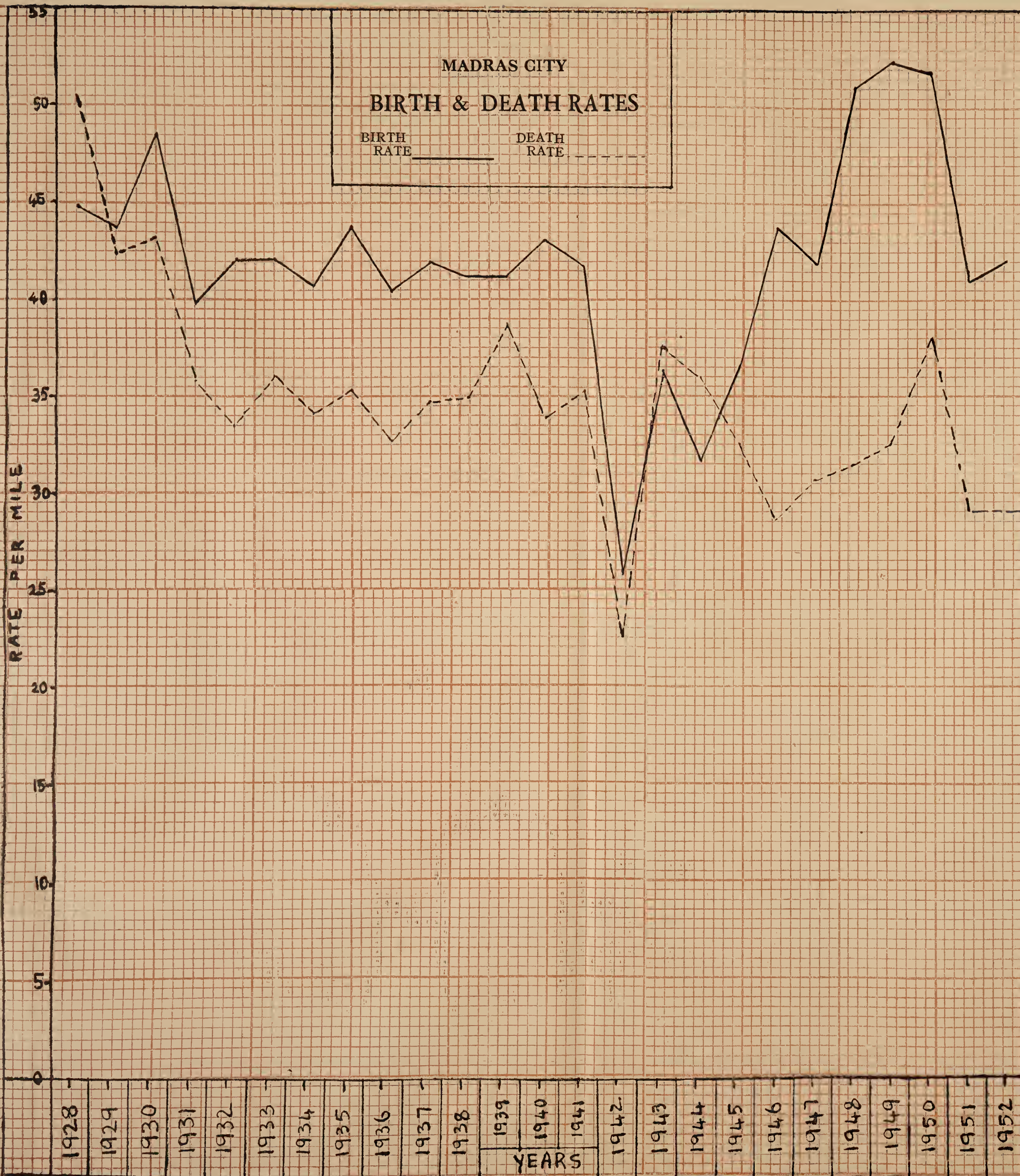
Age groups	No. of deaths recorded	Percentage to total deaths
Under one year	... 10,308	23.85
1 year & under 5 years	... 11,062	25.60
5 " 10 "	... 2,025	4.68
10 " 15 "	... 784	1.81
15 " 20 "	... 858	1.99
20 " 30 "	... 3,028	7.01
30 " 40 "	... 2,693	6.23
40 " 50 "	... 2,677	6.20
50 " 60 "	... 2,906	6.73
60 years & upwards	... 6,866	15.90
Total	<hr/> ... 43,207 <hr/>	<hr/> 100.000 <hr/>

MADRAS CITY BIRTH & DEATH RATES

BIRTH
RATE

DEATH
RATE

RATE PER MILE



Deaths under 5 years and above 60 years of age represent 65.35 percent of the total deaths. Statement No. VI of the appendix to the report gives the number of deaths classified according to sex and age recorded in each of the divisions during the year.

On account of the non-availability of age composition of the population in the last census, death-rates could not be worked out for each age period.

Infant mortality: There were 10,308 infant deaths in 1952 giving an infant mortality rate of 163.82 against 9821 infant deaths and a rate of 166.57 in the previous year and the average rate of 172.97 for the quinquennium. The infant deaths account for 23.85 percent of the total deaths in 1952. The number of infant deaths under one month continues to constitute more than one-third of total infant deaths as in the previous years. The infant mortality recorded in each of the divisions is furnished in Statement No. IV appended to the report.

The average infant mortality rates recorded in the city during the past five decades are given below :

Years	Average infant mortality rate
1901-1910	301.00
1911-1920	298.01
1921-1930	269.10
1931-1940	230.79
1941-1950	203.24
1951	166.57
1952	163.82

It will be seen from the above that the infant mortality rate has steadily decreased during the five decades.

The distribution of infant deaths in the different age periods of the first year of life during the year was as follows :

Age period	No. of deaths	Proportion to total infant deaths.
Under 7 days ...	2,244	21.77
7 days & under 1 month ...	1,394	13.52
1 month & under 6 months ...	3,481	33.77
6 months & under 1 year ...	3,189	30.94
	<u>10,308</u>	<u>100.00</u>

35.29 per cent of infant deaths during the year occurred within one month after birth.

Seasonal variation: Infant deaths recorded during each quarter of the year was as follows :

Quarter	No. of infant deaths	Percentage to total infant deaths
1st	2,291	22.23
2nd	2,346	22.76
3rd	2,537	24.61
4th	3,134	30.40
Total	<u>10,308</u>	<u>100.00</u>

Infant mortality by community.—The infant mortality and the rates among the principal communities are furnished below :

Community	No. of births recorded	No. of infant deaths	Mortality rate per 1000 births registered
European	22	...	...
Anglo-Indian	301	37	122.92
Indian Christian	2557	384	150.18
Muslim	5255	1112	211.61
Hindu	54775	8775	160.21
Others	11	...	...
Total	62,921	10,308	163.82

Infant deaths by months : Statement No. VIII in the appendix gives in detail the number of infant deaths with rates according to months as compared with 1951.

Principal causes of deaths : The statement below furnishes the number of deaths from principal causes with rates recorded during the year:

Principal causes of death	No. of deaths registered in 1952	Death-rate per 1000 of estimated population
Cholera	* 182	0.12
Small-pox	* 127	0.09
Measles	6	0.004
Enteric fever	* 276	0.19
Malaria	75	0.05
Other fevers	3823	2.57
Dysentery	3949	2.65
Diarrhoea	2665	1.79
Tuberculosis including Tubercle of lungs	627	0.42
General respiratory diseases	10137	6.81
Injuries	536	0.36
Deaths from child-birth	155	0.10
All other causes	20649	13.88
Total	43,207	29.03

* includes deaths of non-residents among mofussil cases admitted into the city hospitals.

Plague : The city was free from Plague during the year.

Cholera : Cholera which showed increased incidence during September 1951 gradually declined during the subsequent months and the city was free from it except for sporadic cases reported in some of the divisions during the year. The disease generally shows increased incidence during September to January.



Attacks and deaths from Cholera registered during each month in the year are furnished below :

Month	Cases recorded in the city		Cases admitted from the adjoining district of Chingleput for isolation and treatment	
	A.	D.	A.	D.
January	106	17	34	8
February	53	7	28	2
March	36	8	9	...
April	60	5	11	1
May	34	6	3	...
June	14	1	2	...
July	12	1	...	...
August	33	4	26	4
September	16	1	...	...
October	17	4	...	...
November	105	12	1	...
December	489	94	54	7
Total	975	160	168	22

In all, 975 attacks and 160 deaths from Cholera were registered in the city during the year with a death-rate of 0.11 per mille against 1220 attacks and 186 deaths with a death-rate of 0.13 per mille recorded in 1951, the quinquennial average rate being 0.11 per mille.

The usual preventive measures consisting of disinfection of infected materials and areas, chlorination of water supplies, special attention to general sanitation and conservancy, house-to-house inspection in the infected areas, isolation of suspected cases, inoculation of contacts and all those exposed to infection were promptly adopted. In all cases of imported infection, intimations were sent to the Health authorities concerned for information and necessary action.

The Government and the Director of Public Health, Madras, were kept informed of the day-to-day situation of the incidence of Cholera in the city. Powers under section 76 (2) of the Madras Public Health Act which were conferred on the Health Officer in G.O. Ms. No. 3418, Health, dated 28th September 1950 were invoked during the year which enabled the department to protect more than 2,08,355 persons against Cholera during the year. 7 persons were prosecuted during the year for failure to notify cases of Cholera and to get themselves inoculated.

As usual, cases of Cholera from the adjoining District of Chingleput were removed to the Infectious Diseases Hospital, Tondiarpet, for isolation and treatment. During the year, 168 cases were treated for Cholera of which 22 died.

There is only one Infectious Diseases Hospital at Tondiarpet maintained by the Corporation at the northern end of the city. Ambulance could not be sent to far off places outside the city for the removal of cases, especially when there is heavy rush of cases for admission within the city. In such cases, patients from outside seek admission into the Hospital by using private conveyance and sometimes by public buses also, thus tending the spread infection. It is, therefore, necessary that District Health Authorities, in the interest of public health, make their own arrangements for isolation of such cases within the district.

Small-pox : Small-pox was prevalent in the city throughout the year in a sporadic form. Attacks and deaths reported in the city during each quarter of the year are furnished below :—

Quarter	City		Cases admitted from the adjoining district of Chingleput for isolation and treatment	
	Attacks	Deaths	Attacks	Deaths
1st ...	279	47	24	1
2nd ...	171	33	27	4
3rd ...	139	29	6	...
4th ...	58	13	7	...
Total ...	647	122	64	5

647 attacks and 122 deaths from Small-pox were recorded in the city against 2348 attacks and 449 deaths during the previous year. The death-rate calculated on the estimated population was 0.08 per mille against 0.31 in 1951, the quinquennial average rate being 0.28 per mille. Necessary steps were promptly taken to check the spread of the disease in the city. Intensive house-to-house inspection was conducted throughout the city for the vaccination and re-vaccination of unprotected children and adults. Vaccination was performed in hutting grounds, slums, kuppams, markets, lodging houses, hostels, bazaars, etc., with a view to deal with the incoming population. Vaccination was also conducted after dusk in slums and other infected areas to get at the labouring classes. Re-vaccination was conducted in public institutions such as offices, firms, factories, companies, colleges, schools, mills, etc. As soon as a case was notified or detected, the patient was immediately removed to the Infectious Diseases Hospital. 99 per cent of the reported or detected cases were hospitalised during the year. The Sanitary Inspectors examined all the contacts daily till the end of the incubation period. Intimations were sent to the Health authorities concerned in all cases of imported infection. Medical Officers in charge of Health Education conducted lectures in the infected areas and their surroundings explaining to the public about the prevalence of the disease and the precautionary measures to be taken to check the spread of the disease. Statement No. VII in the appendix furnishes the number of deaths in the divisions in the city. Vaccinations and re-vaccinations performed during the year are given in a separate report. The number of cases isolated and treated at the Infectious Diseases Hospital, Tondiarpet, are furnished in another statement appended to the report.

Measles : 6 deaths from Measles were registered during the year with a death-rate of 0.004 per mille of the estimated population against 2 deaths with a death-rate of 0.001 in 1951.

Enteric or Typhoid Fever : The disease was prevalent in the city throughout the year and almost all the divisions in the city returned cases. 955 cases with 235 deaths were registered in the city during the year against 810 attacks and 214 deaths in the previous year. The death-rate calculated on the estimated population was 0.16 per mille in 1952 against 0.15 in the previous year. Necessary preventive measures were adopted in all notified cases. Over 20,000 inoculations against Typhoid were performed in the city.

In accordance with the provisions of the Madras Public Health Act, Medical Practitioners are required to give information of Enteric cases of which they are cognizant but the response has not been satisfactory.

During the year, 152 cases were admitted into the city hospitals, nursing homes, clinics, etc., for treatment from the adjoining district for treatment. Of these, 41 died.

Malaria : The number of deaths in the city due to Malaria was 75, equivalent to a death-rate of 0.05 per mille as compared with 91 deaths with a death-rate of 0.06 per mille in 1951 and the quinquennial average rate of 0.06 per mille.

A report of the work done by the Anti-Malarial staff is given separately.

Tuberculosis : Tuberculosis including Tubercle of lungs accounted for 627 deaths during the year with a death-rate of 0.42 per mille against 898 deaths with a death-rate of 0.63 per mille in 1951, the quinquennial average rate being 0.66

The Health staff inspected the houses of cases notified and gave necessary instructions to the contacts about its prevention and to get themselves examined and treated.

Though Tuberculosis is a notifiable disease under the Madras Public Health Act, notification by Medical Practitioners is very poor.

Details of cases treated at the Corporation Tuberculosis Hospital and at the Clinics are furnished separately.

Other fevers : Under this head are registered all deaths due to fevers other than Malaria, Enteric Fever and Tuberculosis. During the year, 3,823 deaths under this head were registered against 3,504 deaths in the previous year. The death-rate calculated on the estimated population was 2.57 per mille against 2.44 in 1951, the average rate for the previous five years being 2.58 per mille.

Dysentery and Diarrhoea : Under this group of causes, 6,614 deaths were registered during the year against 5,695 deaths in 1951. The death-rate was 4.44 per mille of the estimated population against 3.97 per mille in the previous year, the quinquennial average being 3.72 per mille.

General Respiratory Diseases : 10,137 deaths with a death-rate of 6.81 per mille were registered under this cause during the year as compared with 9,933 deaths with a death-rate of 6.93 per mille in 1951 and the quinquennial rate of 7.64 per mille. The death-rate recorded during the year was the lowest since 1947.

Injuries : 536 deaths from injuries were registered during the year against 443 in the previous year. The death-rate was 0.36 per mille against 0.31 per mille in 1951.

Maternal Mortality : The number of mothers who died as a result of child-birth during the year was 155 against 151 deaths in the previous year. The maternal mortality rate during the year was 2.40 per 1000 births (live and still) against 2.49 in the previous year, the average rate for the previous five years being 2.77.

The maternal mortality rates per 1000 births recorded during the past 20 years are given below :—

Year	Maternal mortality rate	Quinquennial average
1932	10.0	10.8
1933	11.6	
1934	11.1	
1935	11.4	
1936	10.1	
1937	9.3	8.5
1938	9.2	
1939	7.7	
1940	7.9	
1941	8.7	
1942	7.5	6.5
1943	9.3	
1944	6.8	
1945	5.1	
1946	3.6	
1947	3.9	2.8
1948	2.8	
1949	2.5	
1950	2.2	
1951	2.5	
1952	2.4	

There has been a definite fall in the average maternal mortality rate during the quinquennium 1947-1951 as compared with that in any other previous quinquennial period.

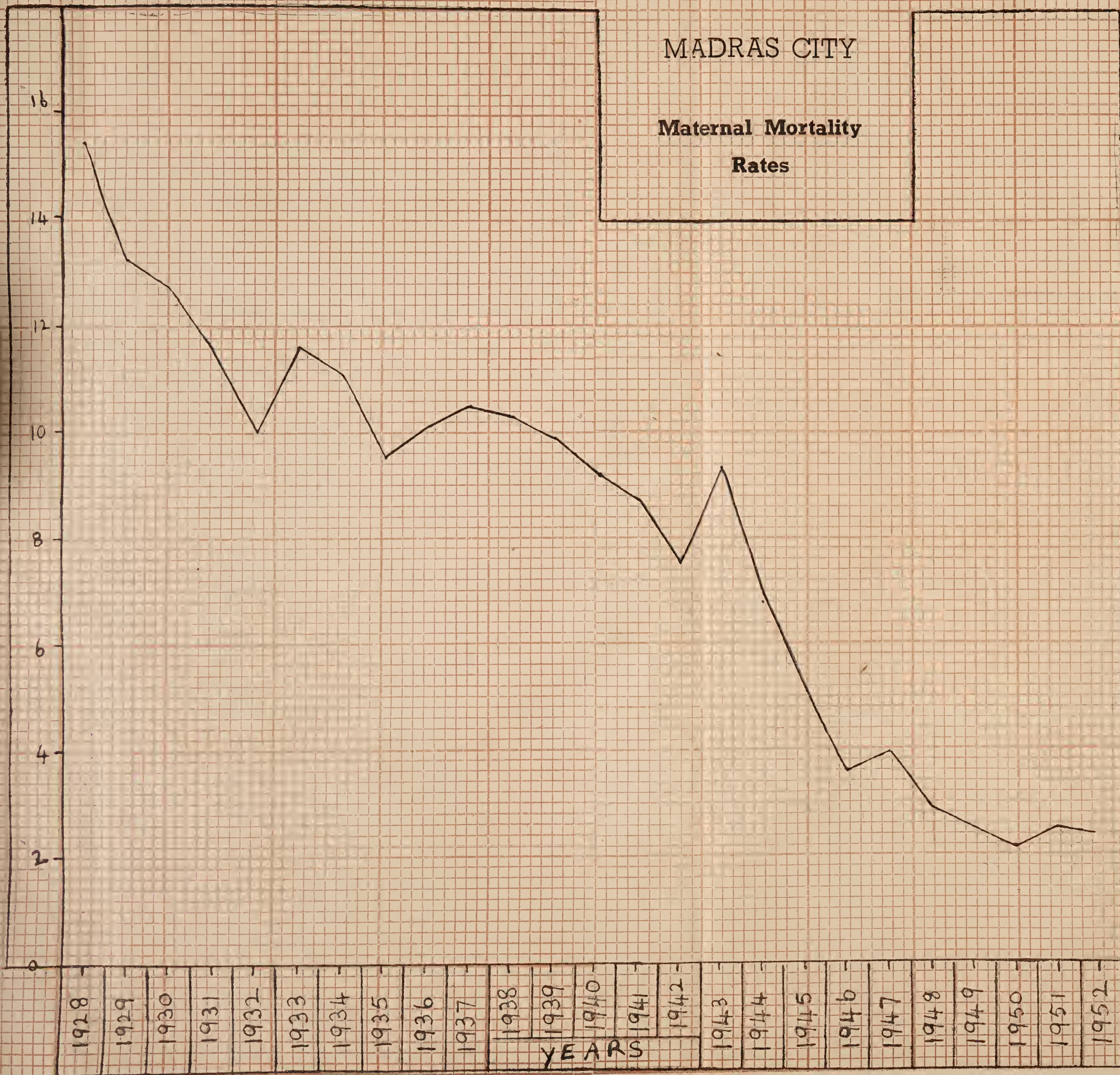
The statement below classifies maternal deaths according to age periods and causes of deaths :

Causes of Death	Under 20 years	20 years and under 30 years	30 years and under 40 years	40 years and above	Total	Percentage to total deaths from child birth
Puerperal Sepsis ...	4	24	14	...	42	27.1
Abortion ..	2	6	3	2	13	8.4
Other accidents of diseases of pregnancy ...	17	50	29	4	100	64.5
Total ...	23	80	46	6	155	100.0

*Deaths from other causes :—*20,649 deaths from other causes have been registered during the year against 20 360 deaths in 1951. The death-rate under this head calculated on the estimated population was 13.88 per mille against 14.20 per mille in the previous year, quinquennial average rate being 16.82 per mille.

MADRAS CITY

Maternal Mortality Rates



Certified deaths: During the year, 8,410 deaths were certified by the various hospitals, nursing homes, clinics and institutions in the city and 1,078 deaths were certified by private medical practitioners as to the causes of death. As in the previous year, certified deaths represented 22 per cent of the total deaths registered during the year. Medical Officers in charge of Registration of Births and Deaths verified the causes of other deaths. The percentage of certified deaths still continues to be poor and unsatisfactory.

Vaccination

Staff: 18 Medical Officers were in charge of Vaccination during the year upto 7-4-1952. From 7-4-1952, the number of Medical Officers was reduced to 10 designated Sub-Assistant Health Officers, each in charge of 5 divisions. They were assisted by 72 male vaccinators and 8 lady vaccinators. Vaccinations were also performed at the Corporation Dispensaries, Corporation Schools and Child Welfare Centres by the respective Medical Officers. Sanitary Inspectors vaccinated the contacts of Small-pox cases and those employed in licensable places. Vaccination and inoculations were also done at the Ripon Buildings for those who required it urgently during the non-working hours of the Vaccination Depots.

Vaccination: Vaccination is compulsory in the City. During the year, 2,90,471 vaccinations were performed in the city. Of these, 52,518 were primary vaccinations, 2 secondary vaccinations and 2,37,951 were revaccinations. The following statement gives the particulars of vaccinations done during the last 10 years:

Year	Primary and Secondary Vaccinations	Re-vaccina- tions	Total
1943	27,285	99,698	1,26,983
1944	29,732	2,93,673	3,23,405
1945	30,179	3,71,150	4,01,329
1946	33,517	2,95,226	3,28,743
1947	37,468	1,27,682	1,65,150
1948	36,250	97,565	1,33,815
1949	46,266	3,39,418	3,85,684
1950	56,804	9,05,402	9,62,206
1951	52,027	4,06,292	4,58,319
1952	52,520	2,37,951	2,90,471

Operations: 52,518 primary vaccinations were performed during the year against 52,027 in the previous year, the quinquennial average being 45,763. 2,37,951 revaccinations were performed in 1952 against 4,06,292 in 1951. The decrease in the number of revaccinations during the year was due to the fewer case of Small-pox reported in the city. As usual, the vaccination staff made house-to-house inspection with a view to detect unprotected children who either moved into the city from outside or were born in the city and had escaped vaccination.

The vaccination staff contacted the parents of 59,881 babies born in the city for the purpose of compulsory vaccination under the by-laws framed under section 349 (26) of the Madras City Municipal Act. By intensive house-to-house inspection, they were able to detect 19,100 babies born in mofussal and brought into the city without being vaccinated. 6,561 babies under one year of age died before vaccination 16,349 babies left the city before verification for purpose of vaccination and 6,062 babies could not be traced. 917 babies were certified as unfit for vaccination under medical advice. 42,733 babies under one year of age i.e., 85 per cent of those available for vaccination were vaccinated during the year.

Number of successful vaccination: The success rates for the year were 99.9 in primary vaccination and 5.7 in re-vaccination.

Primary vaccination: Primary vaccinations performed in the city under different age periods are furnished below:

Age periods.		Number of primary vaccina- tions performed	Percentage to total primary vaccinations
Under six months	...	6,148	11.7
6 months & under 1 year	...	36,585	69.7
1 year & under 2 years	...	5,719	10.9
2 years & under 3 years	...	1,558	3.0
3 years & under 4 years	...	1,393	2.7
4 years & under 5 years	...	491	0.9
5 years & under 10 years	...	597	1.1
10 years & above	...	27	0.05
		52,518	100.00

Inspection of vaccinated persons: The Health Officer, Assistant Health Officers and Medical Officers in charge of Vaccination inspected vaccinated cases. During the year, 45,079 primary vaccinations and 2,737 re-vaccinations were verified by them. The remaining cases were verified by the vaccinators themselves. 236 persons were prosecuted for failure to get their children vaccinated and 150 persons for failure to get themselves re-vaccinated inspite of notices served on them under section 349 (26) of the Madras City Municipal Act. The vaccinal conditions of Small-pox cases recorded by the Health staff are tabulated below:

Age periods	Vaccinated as evidenced by at least one mark		Not vaccinated and vaccinated during incubation period and said to have been vaccinated without marks		Cases fatality rate per cent	
	Attacks	Deaths	Attacks	Deaths	Vacci- nated	Un- vacci- nated
Under one year	49	25	...	51
1—5 years	58	21	25	36
5—10 years	40	7	7	17
10—15 years	13	3	...	23
15—20 years	24	5	4	21
20—25 years	19	8	26	42
25—30 years	23	8	7	35
30—35 years	24	5	6	21
35—40 years	2	2	17	40
40—50 years	10	5	8	50
above 50 years	9	6	10	67
Total	427	32	274	95	7	35

The total includes 64 Small-pox cases admitted into the Infectious Diseases Hospital, Tondiarpet, from the adjoining district of Chingleput during the year.

Training of pupils in vaccination: Students of the Sanitary Inspector Course of the Madras Medical College and of the Government Stanley Medical College, apprentice physicians of the College of Indigenous Medicine, Kilpauk, and the students of the Christian Medical College, Vellore, were posted for training in vaccination under the Medical Officers in charge of Vaccination during the year.

Medical Relief

There were 32 general dispensaries, 8 special clinics and 2 hospitals at the commencement of the year. 24 of the dispensaries were Allopathic, 3 Siddha, 4 Unani and 1 Ayurvedic. An allopathic dispensary was opened early in April 1952 in Palmyrah Kuppam.

Of the special clinics, 5 attend to Tuberculosis cases, 2 to leprosy and 1 to Venereal Diseases.

The hospital for Infectious Diseases at Tondiarpet and that for Tuberculosis cases at Otteri continued to serve the needs of the citizens satisfactorily. The Public Health Laboratory situate behind Ripon Buildings continued to grow in popularity. The Ashok Vihar completed its fourth year of useful service. Separate reports on the working of the various institutions are found in the following pages.

DISPENSARIES

29,66,680 prescriptions were dispensed in the 33 Corporation dispensaries during the year as against 27,18,525 in 1951. Detailed figures are furnished in the Appendix. (Medical Relief Statement I.)

SPECIAL CLINICS

As in the previous years, the two leprosy clinics, one in Ice House Road and the other in Vyasarpady, continued to progress in all ways.

There was a growing awareness among the public for early diagnosis of leprosy as evidenced by the attendance at the clinics and for verifying if they were victims of this disease.

During 1952, the clinics registered a total attendance of 51,845 including 11,534 new cases of skin disease and leprosy. Out of 1964 new leprosy cases, 392 were infective and the rest non-infective. On the whole, 25,803 injections for leprosy cases and 1928, for skin cases were given.

Medical Officers of the clinics, assisted by Health Visitors, carried out survey work as in the previous years. The Health Visitors visited the houses of the irregulars in the afternoons. They advised the patients to continue treatment regularly and also assisted in tracing contacts. Details of survey work are furnished in the Appendix.

Venereal Clinic:—3,272 new cases and 21,675 old cases were treated in the clinic during the year.

		New cases 1952			
		Males	Females	Children	Total
Syphilis	...	264	365	63	692
Gonorrhoea	...	489	230	11	730
Soft sore	...	900	...	...	900
Bubo	...	111	3	...	114
Non-venereal genital lesions	...	267	495	74	836
Total	...	2,031	1,093	148	3,272

Syphilis: Till the end of March 1952, Arsenic and Bismuth were used for treatment. From April 1952, Procain Penicillin with Aluminium Monosulphate was in use. This new regime of treatment is considerably more convenient to the patients as it is short and not spread over a long period as in the case of Arsenic and Bismuth. On account of the short course of treatment with P.A.M., most of the patients complete their courses of treatment. They do not always respond to requests for having their blood tested after the completion of the treatment.

35 men and 70 women were available for blood test after treatment. Of these, 20 men and 13 women were weak positive and 9 men and 32 women were strong positive. 5 men and 25 women were cured as evidenced by serological examination. Even after a second course, one male was still positive but has had no active lesions.

Thanks are due to the UNICEF for their gift of 595 vials of P.A.M. each of 10 c.c. and 3 lakhs potency per cc for the treatment of priority patients, viz., women and children. To match this gift, the Corporation purchased 700 vials for the treatment of male patients.

Results of treatment:

No. of patients available for blood test after treatment		Blood reaction after giving one course of treatment (8 injections)						Blood reaction after 2 or more courses					
		Negative		Weak positive		Strong positive		Negative		Weak positive		Strong positive	
Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
35	70		25	20	13	15	32	5	...	...	...	1	...

As a routine, it was insisted upon that the partner of the patient should also attend the clinic for investigation and treatment. 216 couples could thus be treated at the clinic during the year. Of these, 49 were syphilis and 167 gonorrhoea.

Contact tracing was done by the Health Visitor. Her work was spread all over the city. Once the results of blood examination were received, she visited the homes of the positive cases in the evenings and educated the patients on the need for regular treatment of themselves and their contacts. Some cases dropped away after the first few injections, once the ulcers disappeared. In such cases she visited the houses of the irregulars repeatedly and persuaded them to continue treatment. Mofussil patients also stopped away after a few injections and contact tracing was not possible in their cases. The Health Visitor visited 866 houses during the year and met 597 patients. 178 of them responded for regular treatment.

29 patients were referred to this clinic by the Child Welfare centres for treatment.

13 children with syphilis were treated in the clinic. Of these, 53 were congenital and 10, acquired.



Corporation Dispensary—Palmyrah Kuppam



Latest addition to the Zoo—Bison

Gonorrhoea : 230 women, 11 children and 439 men were treated in the clinic with penicillin with entirely satisfactory results.

Capt. and Mrs. Senaputra of the Salvation Army visited the clinic at intervals and spoke to the patients about venereal disease and their after effects.

Tuberculosis Clinics

General : The five clinics, one in Pulianthope High Road and one each in the four Government Hospitals in the city continued to function satisfactorily during the year. The clinic in Pulianthope High Road is under the direct control of the Corporation and the other four are run in accordance with G.O. No. 809 P.H. dated 4-3-50, in pursuance of a co-ordinated scheme for the control of Tuberculosis in the city, sponsored jointly by the Government and the Corporation and work under the guidance of the Director of the Government Tuberculosis Institute, Egmore.

Clinic in Pulianthope High Road : The clinic in Pulianthope High Road was started in 1947 and has been registering a steady increase in attendance year after year. The growing awareness among the public of the need for early diagnosis of Tuberculosis explains this increased attendance at the clinic. To cope with the increasing demand in its services, another medical graduate has been posted early in 1952 to assist the Medical Officer.

The clinic concentrated its efforts in the preventive control area assigned to it. Details of the work in this direction will be found in Table 'X' below.

Clinical and Fluoroscopic examinations were done as a routine. Roentgenograms were taken as and when required either for establishing diagnosis or for initiating treatment or for periodical check-up of patients after discharge from the hospital.

Laboratory examinations of sputum smears, urine, etc., were done in the Clinical Laboratory and the assistance of the Corporation Public Health Laboratory was sought for culture only.

Notification : Every positive case diagnosed at the clinic was notified to the sanitary staff to enable them to take care of the general sanitation of the houses and their surroundings.

Home visits : The number of home visits made by the Health Visitor during the year was higher than in any of the previous years. The Health Visitor proved an essential link for domiciliary supervision, treatment, after-care and advice on prophylaxis. She had been of value both to the ideals of the clinic and to the numerous patients who, for want of institutional accommodation, had to be home-isolated. The patients were provided with receptacles for collecting sputum and disinfectants free of cost.

The experience of the Health Visitor had been that ideal home-isolation was not possible in the vast majority of houses in the preventive control area. The Health Visitor had to make the best use of the means available for improving useful methods of home isolation.

Contact examination : Contact examination as a measure of case-finding was facilitated by the Health Visitor. Through her efforts, a greater number of contacts from the preventive control area turned up at the clinic for examination.

Tuberculosis testing and B.C.G. Vaccination : The services of the Corporation B.C.G. Team were spared to the clinic twice a week (Wednesdays and Saturdays) from October 1952 and this opportunity was availed of to test and vaccinate contacts in the preventive control area. The response from the public appeared to be good and we hope that in the coming year this will grow in popularity.

Treatment : In the present context of insitutional bed shortage, facilities for treatment at the Clinic appeal most to a patient which in turn forms th, first step towards prevention and cure. Treatment of patients at the Clinics therefore, received the same importance as in the previous years.

Treatment of cases at the Clinic is considered under the following groupings :—

- (i) Early cases which needed only clinic attention.
- (ii) Cases suitable for active short-term institutional therapy.
- (iii) Symptomatic treatment of cases unsuitable for active short-term therapy and advanced cases with little or no chance of recovery.

Organised home treatment : The Clinic functions in co-operation with the other clinics in the city for purposes of organised home-isolation and treatment. Cases diagnosed at different centres are transferred to the respective clinics for purposes of effective control.

After-care : The Health Visitor brought patients either for continuing treatment or for periodical check-up after discharge from the Hospital.

Co-operation with General Practitioners and other institutions : General Practitioners in the City referred a number of cases to the Clinic as in the previous years for opinion and suggestion on treatment. Among these, a large number was from Buckingham and Carnatic Mills Dispensary for opinion and treatment. Patients from the Corporation Dispensaries, Health and Recreation Centre (Ashok Vihar), Simpson Medical Centre, etc., were also referred to the Clinic for opinion.

Admission to the Corporation Thiruvotteeswarar Tuberculosis Hospital :— A list of patients needing hospitalisation was maintained as in the previous years. Each case was considered on its merits and urgency for purposes of admission in the Corporation Thiruvotteeswarar Tuberculosis Hospital, Otteri.

Information on admissions into other Sanatoria : This was furnished to the patients as and when required by them,

Economic relief : 13 deserving cases from our preventive control area received financial aid of Rs. 20 per mensem each from the City Tuberculosis Association. The total financial assistance thus given amounted to Rs. 260 during the year.

Education : Education both at the Clinic and outside by the Health Visitor in the houses of the patients on the various aspects of the disease continued to be a regular feature of the activities of the Clinic.

Visitors :

1. Major K. N. Rao, Tuberculosis Adviser to the Government of Madras.

2. Sri R. S. Sandi, I.A.S., Secretary to Government of Bihar, Patna.
3. Sri K.N. Sinha, Secretary, Bihar State Branch, Indian Conference of Social Work.
4. Mr. Tin Maung, Municipal Councillor, Corporation of the City of Rangoon, Union of Burma.

The working of the Clinic is detailed in the following statements :—

I. STATEMENT OF CASES DIAGNOSED

9,814 new cases were examined at the Clinic. Of these, 1,804 (i.e. 18.4%) were diagnosed as Tuberculosis and 1,680 (i.e. 81.6%) among them were Pulmonary Tuberculosis cases.

Number of repeated cases during the year, both Tuberculous and non-tuberculous : 44,946.

Table 'A' : Number of cases examined and the number of Tuberculous cases among them during the last 5 years

Year	No. of cases examined	No. of cases diagnosed as Pulmonary Tuberculous	No. of cases diagnosed as non-pulmonary tuberculous	Total no. of cases diagnosed as Tuberculous	Percentage of Tuberculous cases
1948 ...	7,734	999	41	1,040	15.1%
1949 ...	9,144	1,583	57	1,640	17.8%
1950 ...	9,284	1,580	50	1,630	17.2%
1951 ...	7,962	1,332	64	1,396	17.5%
1952 ...	9,814	1,680	124	1,804	18.4%

Table 'B' : Daily average attendance during the last 5 years

Year.	Daily average.
1948 ...	99
1949 ...	140
1950 ...	147
1951 ...	136
1952 ...	150.5

II. STATEMENT SHOWING DISPOSAL OF PULMONARY TUBERCULOSIS CASES

Table 'A' :

	1950	1951	1952
P.T. Stage I ...	18	23	44
P.T. Stage II ...	6	17	65
P.T. Stage III ...	1566	1292	1571
Total ...	1580	1332	1680

A vast majority of cases were in the advanced stage though more number of cases were detected in Stages I and II during the year under review. This may be due to the growing awareness among the public for early diagnosis.

Table ' B '—Showing age-group :

Years	No. of cases
1 to 5	29
6 to 10	18
11 to 15	30
16 to 20	197
21 to 25	330
26 to 30	265
31 to 35	330
36 to 40	195
41 to 45	106
46 to 50	91
51 to 55	36
56 to 60	37
61 and above	16
Total	1680

Table ' C ' :—Regional Distribution

Preventive control area of the clinic	No. of cases in 1952
Pulianthope	190
Choolai	280
Perambur	226
Sembiam	25
Kosapet	125
Vyasarpady	44
Ayanavaram	48
Purasawalkam - included in the Government T.B. Institute area	...
Total diagnosed at the Clinic	938
Cases transferred from other clinics	337
Total number of cases diagnosed in the preventive control area	1,275
No. of cases belonging to other areas diagnosed at this clinic and transferred to respective clinics for effective home visiting	742

III. LABORATORY, FLUOROSCOPIC AND RADIOGRAPHIC EXAMINATIONS

No. of sputums examined	5,010
Fluoroscopic examinations	11,810
No. of Radiographs taken	936

IV. HOME VISITS BY THE HEALTH VISITOR AND CONTACT EXAMINATIONS DURING THE LAST FIVE YEARS

	1948	1949	1950	1951	1952
Prime Home visits	725	897	927	1,069	1,130
Re-visits	769	485	233	205	212
Visits to discharged patients from the hospital for after-care	Nil	25	357	298	255
Total visits by the Health Visitor	1,494	1,407	1,526	1,572	1,597

No. of contacts examined at the clinic at the instance of the Health Visitor during the last five years ... 1,130 1,074 1,208 1,274 1,845

On an average, 5 contacts per day were examined as compared to 4 contacts per day during the previous year.

TABLE 'A'

P.T. Cases among Contacts during the last 5 Years

P.T. Stage I	...	22	6	8	12	33
P.T. Stage II	...	3	7	4	1	17
P.T. Stage III	...	12	6	13	22	57
Total	...	<u>37</u>	<u>19</u>	<u>25</u>	<u>35</u>	<u>103</u>

Percentage of P.T. cases among contacts during the year 5.5

No. of Contacts Tuberculin Tested and B.C.G. Vaccinated from October 1952

No. of contacts Tuberculin tested	...	325
Tuberculin positive	...	148
No. B. C. G. Vaccinated	...	45

VI. 1. *Artificial Pneumothorax* :

(a) No. of cases from whom A.P. was tried at the Clinic as out-patient	...	71
(b) No. of cases who got A.P. as continuation of treatment after discharge from the Hospital and from other institutions	...	33
(c) No. of cases brought over from the previous year who continued A.P. at the clinic	...	54

Total no. of patients who had A.P. at the Clinic	...	<u>158</u>
--	-----	------------

2. (a) No. of cases in whom A.P. failed for want of free pleural space	...	9
(b) No. of cases for whom A.P. was abandoned at various stages during the year as being either contra-selective or on account of complications developing.	...	24
(c) No. of A.P. cases who discontinued treatment against medical advice	...	17
(d) No. of cases of A.P. admitted into the Hospital in a better condition for continuing treatment (one case was admitted in U.M.T. Sanatorium, Arogyavaram)	...	32
(e) No. of Hospital-discharged cases for whom A.P. was abandoned during 1952 at the end of successful treatment	...	26
(f) No. of cases for whom A.P. was abandoned during 1952 at the end of successful out-patient treatment alone	...	9
(g) No. of cases who continued treatment till the end of 1952	...	41
Total	...	<u>158</u>

3. *Pneumoperitonum* :

(a) No. of cases for whom P.P. was induced at the Clinic.	...	45
(b) No. of cases for whom P.P. was continued at the Clinic as continuation of treatment after discharge from the Hospital and other sanatoria	...	21
(c) No. of cases brought over from the previous years who continued P.P.	...	45
Total number of patients who had P. P. at the clinics	...	<u>111</u>

(d) No. of cases for whom P.P. was abandoned at various stages as being ineffective or on account of complications setting in (complications like pregnancy, hernia, pleuracy with effusion)	30
(e) No. of cases who discontinued P.P. against medical advice at some stage or other	34
(f) No. of cases admitted into hospital and other sanatorium with P.P.	8
(g) No. of cases for whom P.P. was abandoned at the end of successful treatment	8
(h) No. of cases for whom P.P. was continued till the end of 1952	29
Total	109
4. (a) No. of initial A.Ps given	71
(b) No. of initial P.Ps given	45
(c) No. of A.P. refills given	1,442
(d) No. of P.P. refills given	1,398
(e) No. of Aspiration of fluid	46
(f) No. of air aspiration	2
(g) No. of injections including Streptomycin and other injections by way of sympathetic treatment	4,086
5. (a) No. of cases diagnosed during the year	1,680
(b) No. of cases put on the waiting list on first appearance at the Clinic	550
(c) No. of cases approved for admission including special wards and emergency cases	223
(d) No. of cases actually responded and admitted	164
(e) No. of cases admitted from the preventive control area	90 i.e., 55% of the total admissions

REPORT ON THE WORKING OF THE FOUR TUBERCULOSIS CLINICS IN THE CITY

(By the Director, Government Tuberculosis Institute & Clinics, Madras)

In G.O. No. 809, Public Health, dated the 4th March 1950, Government approved of the scheme for the opening of Tuberculosis Clinics at the Government General Hospital, Government Stanley Hospital, Government Royapettah Hospital and Kasturba Gandhi Hospital for Women & Children, Madras. These four Tuberculosis Clinics were functioning satisfactorily during the year under review.

Two Health Visitors and one Medical Officer were working in each of the two Tuberculosis Clinics at Government General Hospital and Government Stanley Hospital and one Health Visitor and one Medical Officer in each of the Tuberculosis Clinics in Kasturba Gandhi Hospital for Women & Children and Government Royapettah Hospital, besides a House Surgeon, a Nurse and a Clerk deputed from the respective hospitals to work in each of the clinics in the evenings.

A summary of the main work carried out at these four clinics is presented in a tabular form below. From the tabular statement, it will be seen that a very large number of Tuberculosis patients were detected at these clinics and that the clinics were catering to the needs of a larger number of patients than in the previous years.

Preventive work was being done by the Medical Officers and the Health Visitors of each clinic. They visited the Houses of open cases of Tuberculosis. The patients and their contacts were advised suitably. They continued to get sputum receptacles and disinfectants, free of charge. As stated in the previous report, a hospital for segregating all the chronic tubercular cases is absolutely necessary.

The new model Tuberculosis Clinic constructed at the Temple Gardens, Royapettah, Madras, will begin to function as soon as it is taken over by Government.

There were 18 emergency beds in each of the two hospitals—Government General Hospital, and Government Royapettah Hospital.

During the year, 290 cases were admitted in the Emergency Ward at Royapettah Hospital and 517 cases, in the Emergency Ward at the Government General Hospital. Whenever there were vacant beds in the Emergency Wards in addition to spontaneous Pneumothorax and Haemoptysis cases, other emergencies like serious cases from casualty departments and clinics were also admitted.

During the year, 20 phrenic crushes were done by the various clinic doctors.

STATISTICS FOR THE FOUR TUBERCULOSIS CLINICS FOR 1952

Particulars	General Hospital T.B. Clinic	Stanley Hospital T.B. Clinic	Royapet- tah Hospital T.B. Clinic	K.G. Hospital T.B. Clinic	Total
1. No. of cases registered					
Males ...	3445	2909	2660	...	8004
Females ...	1685	1781	868	1631	5965
Children ...	520	730	225	692	2167
Total ...	5650	5420	2743	2323	16136
2. No. of Pulmonary T.B. cases					
P.T. I ..	356	57	54	135	602
P.T. II ...	74	48	47	102	271
P.T. III ...	2899	1085	857	153	3094
Total ...	3329	1190	1058	390	5867
3. No. of Non-pulmonary Tuberculosis cases	84	84	85	144	395
4. No. of non-tubercular cases	2237	4040	1602	1834	9713
5. No. of old cases atten- ded					
Males ...	13823	15524	5199	...	34546
Females ...	8203	5535	2534	5454	21726
Children ...	1376	1641	441	1108	4566
Total ...	23402	22704	8174	6562	60838
6. No. of A.P. Initial	142	133	68	19	362
7. No. of A.P. Refills	1248	568	294	193	2303
8. No. of patients attending for A.P. refills	467	247	122	86	942
9. No. of P.P. Initials	48	191	87	12	338
10. No. of P.P. Refills	1435	900	585	268	3188
11. No. of patients atten- ding for P.P. Refills	515	444	274	84	1317
12. No. of injections given—Streptomycin etc ...	10530	4458	1482	2458	18929

Particulars	General Hospital T.B. Clinic	Stanley Hospital T.B. Clinic	Royapet- tah Hospital T.B. Clinic	K. G. Hospital T.B. Clinic	Total
13. No. of screenings done.	7380	3372	2706	2981	16439
14. No. of aspirations done ...	75	107	125	9	316
15. No. of Tubercular cases referred from other clinics	316	598	255	509	1678
16. No. of homes visited by the Health Visitors	2410	3486	1411	1415	8722
17. No of homes visited by the Medical Officers	590	474	445	386	189
18. No. of contacts examined	1798	2021	1737	1127	6683
19. No. of patients tuber- culin tested (P.P.D.)	1216	2076	624	648	4564
20. No. of pulmonary tuberculin cases among contacts	100	106	85	68	359
21. Percentage of pulmo- nary tubercular cases among contacts	5.8	5.24	4.9	6	5.4
22. No. of phrenic crushes done	...	...	20	...	20
23. Stage to which the pulmonary tubercu- losis cases detected among contacts belong					
P.T. I ...	44	31	19	39	133
P.T. II ...	2	7	5	16	30
P.T. III ...	54	68	61	13	196

Work of Mass X-Ray unit: During the year, groups of industrial workers from Buckingham and Carnatic Mills, Madras Electricity System etc., and others from various institutions like Civil Orphans Asylum, Children's Aid Society, Avvai Home, Vigilance Home, Madras City Police, Madras Fire Service, Indian Air Force and the various city hospitals were mass x-rayed. Mass x-ray of contacts was done at the Tuberculosis Institute and at the Tuberculosis Clinics in the city. A combined mass - x-ray - Tuberculin testing and B.C.G. vaccination was conducted among the students of Women's Christian College under the auspices of the World University Students' Service.

Cases which were found to have suspicious shadows in Mass Radiography were called up for further investigation to the Institute and completely investigated. Such of those cases detected to be tuberculous were put on special waiting list for admission to the Tuberculosis Sanatorium, Tambaram. All these cases were admitted to the Sanatorium within a short period after their registration.

Abstract of the mass work during the year :

1. No. of days the mass x-ray unit was working : (The van or the radiography plant was out of order during the rest of the period). ... 93 days
2. No. of persons mass x-rayed ... 11,143

3. No. of suspicious cases	...	2,648 i.e. 25.9 per cent
4. No. actually reported for further investigation	...	1,628
5. Total No. of P.T. cases detected	.	105
6. Percentage of P.T. cases detected	...	1.7 per cent
7. Average No. of cases mass x-rayed per working day	...	113.4

*Hospitalisation at the Government Tuberculosis Sanatorium, Tambaram
of cases attending the four clinics*

Tuberculosis Clinic, Government General Hospital	...	66
Tuberculosis Clinic, Government Royapettah Hospital	...	6
Tuberculosis Clinic, Government Stanley Hospital	...	26
Tuberculosis Clinic, Kasturba Gandhi Hospital	...	6

Work of the B.C.G. Teams: Two Government Teams and one Corporation Team continued to function in the city. Tuberculin tests were carried out among the children in schools in the city with the consent of their parents. Medical students, pupil nurses and other staff of hospitals were also Mantoux-tested and vaccination offered to the susceptibles. All the contacts of the patients attending the Tuberculosis Institute and the five Tuberculosis Clinics in the City were tested and vaccinations done to the negatives.

The clinics at Ashok Vihar and at the Government Tuberculosis Institute Egmore, continued to function satisfactorily during the year. During the year, such groups as could be observed for periods of two to three years as those in orphanages in the City which have not been taken up in the previous years were tested.

The Indian Air Force Personnel including the officers and their families have been periodically tested and B.C.G. vaccinations given to the negative reactors. The B.C.G. Teams took up the Tuberculin testing of the personnel, families and children of the Armed Forces stationed in St. Thomas Mount and Fort St., George areas for the first time during the year.

A combined Tuberculin—B.C.G. vaccination and Mass X-Ray survey was conducted in the Women's Christian College. during the year. With the co-operation of the Civic Welfare League of Jagannathapuram slum area near Chetput, B.C.G. Campaign was conducted among the residents of this and of the neighbouring slums. The personnel of the Special Armed Police Battalion stationed at Red Hills was also included in the Campaign.

31,868 Tuberculin tests were done during the year giving an average of 2,656 tests per month. The number of those that were B.C.G. vaccinated was 9,412 with an average of 784 B.C.G. vaccinations a month. Re-testing of selected groups of children, who were B.C.G. vaccinated were also undertaken as usual. So far, no untoward complication after B.C.G. vaccination or onset of Tuberculosis among B.C.G. vaccinated individuals were noticed.

During the latter part of the year, educational talks on "The Problem of Tuberculosis and its control with emphasis on B.C.G." were broadcast by Medical Officers from the All India Radio Station, Madras, in Tamil, Telugu, Malayalam and Canareese languages.

The B.C.G. Campaign in Madras City completed its fourth year. Till December 1952, more than 1,25,000 Tuberculin tests and nearly 35,000 B.C.G. vaccinations were done. If the B.C.G. Campaign is to effect any perceptible change in the morbidity and mortality of Tuberculosis in our country, it has to be expanded considerably, so that all those in need get vaccinated within a five or seven-year period.

The opposition to the B.C.G. vaccination which was vociferous and disturbing during 1949-51 had comparatively quietened during the year. But the effect of such opposition was and is still being felt. The public in Madras have to recognise the harmlessness of the vaccination. It is felt that the time is now opportune to expand the campaign concentrating in the first instance in urban areas. A pre-requisite to this is the creation of a Central State B.C.G. Organisation and adequate finances for an all-out publicity campaign as recommended by the Second and Third Central B.C.G. Conferences.

HOSPITALS

Infectious diseases Hospital :

There were 107 cases in the Hospital at the commencement of the year. 5,755 patients from the City and 492 from the mofussil were admitted during the year. 5398 were discharged and 630 died. There were 326 patients in the hospital at the end of the year.

Small pox: There were 19 cases at the beginning of the year. 629 cases from the City and 63 from the mofussil were admitted during the year, of which 579 were discharged after cure and 115 died.

Cholera.—973 patients from the City and 175 from Chingleput District were admitted during the year. There were 47 cases in the hospital at the beginning of the year. 795 were discharged and 299 died.

General.—A new mortuary was built in the eastern portion of the compound. 6 pucca sheds were newly constructed during the year to meet the growing need for accommodation.

Sri Thiruvotteswarar Tuberculosis Hospital :

The Sri Thiruvotteswarar Tuberculosis Hospital, Konnur High Road, Otteri, was started in 1948 with accommodation for 48 patients. It is well-equipped with a laboratory, an operation theatre, a X-ray plant and other clinical appurtenances.

Eight special beds were provided in 1949 and 6 more in 1950. Two beds were donated by the King George V Memorial Fund Committee in 1951. Provision is being made for a further increase of 16 beds in 1953.

Admission to the Hospital is restricted to suitable cases attending the T.B. Clinic, Pulianthope High Road. Hospitalisation, diet and X-ray are free for indigent patients with a monthly income of less than Rs. 100 in the general wards and patients in the special wards pay stoppage charges.

The hospital is in charge of a Medical Officer assisted by an assistant, both T.D.Ds. with a nursing staff of one ward sister and seven nurses.

The number of patients treated in the hospital year after year is furnished in the statement below :—

Year.		No. of patients treated
1948	...	86
1949	...	188
1950	...	210
1951	...	201
1952	...	222

No. of Government servants and their dependants admitted during the year was as follows :—

(a) Central Government servants	...	15
(b) State Government servants	...	7
(c) Corporation servants	...	31

During the year, 15 patients were admitted as Emergency cases with symptoms of Haemoptysis or Spontaneous Pneumothorax.

56 patients were admitted purely on public health grounds for isolation—25 patients in the general wards and 31 in the special wards.

Table showing the number of positive Tubercular cases diagnosed at the clinic and the number of cases admitted for treatment at the hospital during the last 5 years and the results of treatment :

Year	No. diagnosed as Tuberculous at Clinic	No. admitted in T.T.H.	No discharged	Results of treatment (improved cases)
1938	1189	86	38	12
1949	1640	140	137	67
1950	1630	160	152	107
1951	1396	164	161	98
1952	1680	164	161	98

Statistics

58 patients were left over from the previous year. 164 were admitted during the year, thus making a total of 222 patients treated for the year. The total number of discharges including deaths (7) during the year was 161, leaving 62 patients at the end of the year - 49 indigent patients and 13 special ward patients.

Daily average number of patients treated during the year :

1. General wards	...	47.9
2. Special wards	...	13.4
		—
		61.3
		—

Particulars of admitted cases :

Sex Distribution :

Males	112	Females	52
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Age Distribution :

Age periods.		Males.	Females.	Total.
0 to 4 years
5 to 14 years	...	1	1	2
15 to 24 years	...	28	26	54
25 to 44 years	...	72	22	94
45 to 64 years	...	11	2	13
65 and above	...	...	1	1
		—	—	—
Total	...	112	52	164
		—	—	—

Classification of discharged cases:—Out of 161 patients (including 7 deaths) discharged during the year, 153 were Tuberculosis cases and 3 Non-tuberculous cases, i.e., 2 lung abscess and 1 Bronchiectasis.

1. *Type and stage of disease of Tuberculous cases*

Pulmonary Tuberculosis	Stage I	Stage II	Stage III	Total
(a) ...	10	10	23	43
(b) ...	4	2	27	33
(c) ...	4	1	77	82
Total ...	18	13	127	158

Out of 158 Tuberculous cases discharged during the year, 27 patients stayed for periods less than one month. These 27 cases are, therefore, excluded from the results. Thus it will be seen that 80.4% of the admissions were in the advanced or III stage of the disease. 161 discharges shown above includes 7 deaths of which 5 are taken into the statistics and 2 deaths are out of the statistics as the period of their stay in the hospital was less than a month.

Results of treatment

			Stage I			Stage II			Stage III			Total
			a	b	c	a	b	c	a	b	c	
Quiescent	...	...	...	...	1	...	...	...	...	...	...	1
Much improved	...	7	2	4	4	1	...	4	4	6	...	32
Improved	...	1	...	...	2	1	1	10	17	33	...	65
Stationary	...	...	1	...	1	...	...	4	1	20	...	27
Worse	...	...	...	...	...	...	...	...	...	1	...	1
Died	...	...	...	...	...	...	..	...	1	4	...	5
Total	...	8	3	4	8	2	1	18	23	64	...	131

Out of the 131 cases discharged, 93 cases or 74.8% had positive result of treatment. Over 63 out of 131 were in the advanced or III stage of the disease. Out of 11 cases in Stage II, 10 showed positive result of treatment i.e. in the II Stage of the disease, over 91% had positive results and of the 15 cases in Stage I, 14 showed positive results of treatment i.e. 93.3% showed positive result of treatment.

Surgical Treatment:

1. *Artificial Pneumothorax* :

(a) No. of cases in which it was tried	...	Rt. side	...	19
		Lt. side	...	16
		Total	..	35
(b) No. of cases in which it was successful	...	Rt. side	...	17
		Lt. side	...	13
		Total	...	30
(c) No. of cases in which was unsuccessful	...	Rt. side	...	2
		Lt. side	...	3
		Total	...	5

(d) Bilateral A.P. was attempted on 2 cases which were successful and continued	...	2
(e) No. of cases in which A.P. was started outside prior to admission to this hospital	...	29
(f) Total No. of patients who received A.P. treatment	...	85
(g) Total No. of refills given	...	387
In-patients	...	268
Out-patients	...	655
<hr/>		
2. Aspiration of fluid :	30 times	
3. Aspiration of air :	3 times	
4. No. of cases in which Pneumoperitoneum was given to 56 patients.	{ In-patients ... 740 Out-patients ... 394	
<hr/>		
Total	...	1134 refile
<hr/>		
5. No. of cases in which Initial Pneumoperitoneum was given	...	30
6. Thoracoscopy and Cauterisation of Adhesion	...	36
7. Phrenic Paralysis	...	12

Medical treatment :

1. Streptomycin : No. of cases treated	...	72
2. Para Amino Salicylic Acid treatment	...	92
3. Conteben	...	15
4. Isonicotinic Acid Hydrazide	...	28

X-ray work :

1. No. of Fluoroscopic examinations done	...	2,050
2. X-ray skiagrams taken in the Hospital	...	411

Tubercle Bacilli :

Of the 131 cases taken up for statistics, 81 were positive on admission. Out of the 131 discharged, 16 were negative by smear, 27 negative by concentration and 59 negative by culture.

Total No. of sputum samples sent for culture to the Corporation Public Health Laboratory during 1952 82 samples.

Laboratory work :

1. Motion : routine examinations	...	172
2. Urine examination	...	147
	Routine	...
	Albumin	...
	Sugar qualitative	...
	Sugar quantitative	...
3. Sputum for A.F.B.	...	2008
	Smear	...
	Concentration	...
	* Culture	...

(* at Corporation Public Health Laboratory)

4. Blood examinations	...	847
	Differential counts	...
	B.S R	...
	for M.B.	...
	Index	...

5. Examination of Pleural Fluid for Tubercle Bacilli :—

Complications—

1. Empyema	...	3
2. Effusion on A.P. side	...	14

3. Intestinal Tuberculosis	...	9
4. Haemoptysis	...	8
5. Coloured sputum	...	17
6. Ascariasis	...	2
7. Diabetes	...	10
8. Tracheo Bronchitis	...	8
9. Laryngitis	...	4
10. Perianal Tuberculosis	...	7
11. Contralateral spread of disease	...	4
12. Secondary anaemia	...	7
13. Pregnancy	...	1
14. Glands	...	4
15. Malaria	...	2
16. Eczema	...	2
17. Abortion	...	1
18. Otitis media	...	1
19. Haemorrhoids	...	2
20. Hiccough	...	1
21. Delusional Insanity	...	1
22. Pleurisy (wet)	...	4
23. Ascites	...	2
24. Cirrhosis of Liver	...	1
25. Spontaneous Pneumothorax	...	3
26. Breast Abscess	...	1

The following visited the Hospital during the year :

1. Mr. C. H. Sighbatullah, Mayor of Madras.
- *2. Mr. Ellen Brow, (Denmark) Director, Florence Nightingale Trust Foundation, 19, Queen's Gate, London—On study for W.H.O.
- *3. Dr. K. N. Rao, Tuberculosis Adviser to Government of Madras.
4. Mr. V. Ford, W.H.O., V.D. Clinic, Government General Hospital, Madras.
5. Mr. R. S. Sandi, I.A.S., Secretary to Government of Bihar, Labour Department, Patna.
6. Mr. V. B. Singh, Assistant Labour Commissioner, Kanpur (U.P.).
7. Honorary General Secretary, Bihar State Branch of the Indian Conference of Social Works.

* Remarks in the Visitors' Book are reproduced below :

February 8, 1952.

Thank you very much for a most interesting visit. Tuberculosis work has always had my heart and I do wish you luck with your gratifying work in this place.

(Sd.) Ellen Brow,
(Denmark),
Director, Florence Nightingale Foundation,
19, Queen's Gate, London,
on study for W.H.O.

I had the privilege of visiting to-day this Tuberculosis Hospital run by the Corporation of Madras and I am grateful to Dr. S. E. D. Masilamany for giving me this opportunity.

This hospital owes its origin to the philanthropy of Rao Sahib T. P. R. Pillai and further contribution from the Corporation of Madras. This hospital is spotlessly clean and has 64 patients including 15 special ward patients. The institution is most impressive in every aspect including its further development plans.

Dr. K. V. Vaidyalingam, Medical Officer in charge of the hospital assisted by Dr. V. S. Selvapathy, is doing admirable work within the scope of existing facilities. The hospital has a good operation theatre with equipment for Thoracoscopy, a good laboratory and a X-ray plant.

If Thoracic Surgery is contemplated in the near future, the present Medical Officer could be given an opportunity to be trained. Till then arrangements could be made with other surgical centres for the benefit of the patients.

I am impressed with the excellent co-ordination that exists between the Clinics and the Hospital in regard to the admission of patients and follow-up.

When the hospital is further expanded, it is advisable to have paediatric section. I would also suggest a maternity centre nearby solely for pregnant tuberculosis cases.

I congratulate Dr. Masilamany, Dr. Vaidyalingam and the Nursing staff for their excellent organisation.

(Sd.) K. N. Rao,

Tuberculosis Adviser to Government
of Madras.

21st February 1952

PUBLIC HEALTH LABORATORY

Since its commencement in 1946, the Public Health Laboratory has been rendering useful service to the citizens. Its activities have been increasing tremendously year after year. The following figures give an idea of the rapid growth of the laboratory since its inception:

Year	No. of samples examined	Receipts
1946	311	Rs. 215
1947	1,492	6,47½
1948	5,642	1,635
1949	12,266	4,766
1950	16,396	10,939
1951	19,005	11,234
1952	33,089	16,561

During the year 1951, the UNICEF donated to the laboratory a field survey unit for the venereal disease programme and penicillin for the treatment of anti-natal cases, nursing mothers and children with venereal diseases. The complete equipments were received during the year. The modified Manicke and V. D. R. L. Tests for the diagnosis of syphilis in addition to kahn test are now carried out. 595 vials of Penicillin supplied by UNICEF during 1952, were used for the treatment of V. D. positive cases for women and children.

The following statements will show the details of work carried out on various tests done at this laboratory during the year:

*I Statement showing the details of Manieke,
V. D. R. L. Test of UNICEF Team*

Year	No. of positive cases	No. of negative cases	Total
1952	237	5,356	5,593

II Statement showing the details and number of serological tests done for the Private Practitioners

No. of positive cases	No. of doubtful cases	No. of negative cases	Total
431	66	2,933	3,430

III Statement showing the details and number of serological tests done for the Venereal Clinic, Corporation of Madras

No. of positive cases	No. of doubtful cases	No. of negative cases	Total
218	45	533	796

IV Statement showing the details of work done at the Laboratory on various specimens during the year

Blood	Sputum	Urine	Motion	Other smears	Total
23,074	1,961	1,869	5,905	280	33,089

V Statement showing the details of the specimens received from Private Practitioners and from the various clinics, and dispensaries of the Corporation of Madras etc.

Private Practitioners	Child Welfare Centres	Corporation Dispensaries	Clinics	Others	Total
20,054	4,935	1,231	1,927	4,942	33,089

VI No. of specimens of motion from the Infectious Diseases Hospital, Tondiarpet

1,961

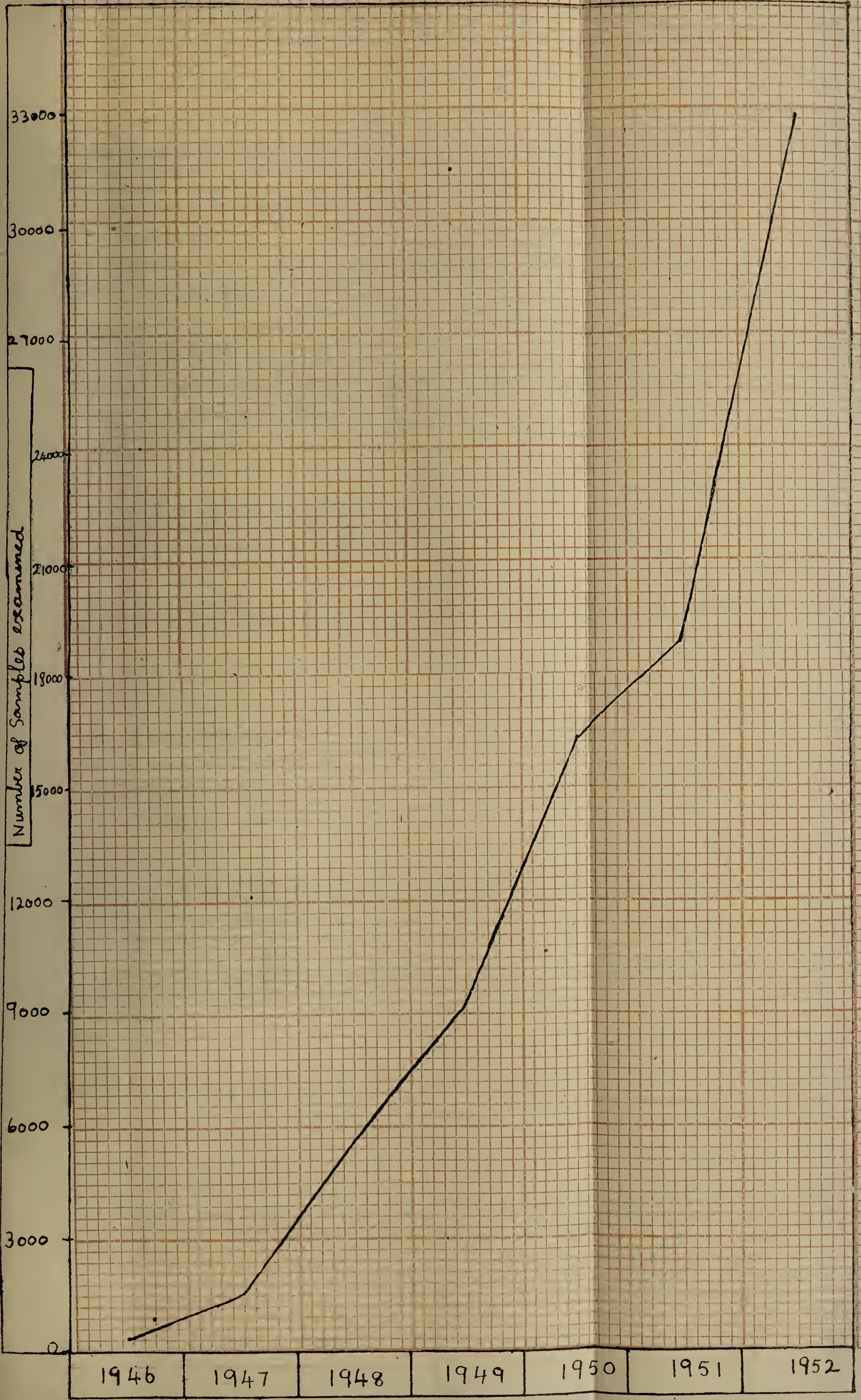
VII Statement showing the details of collections.

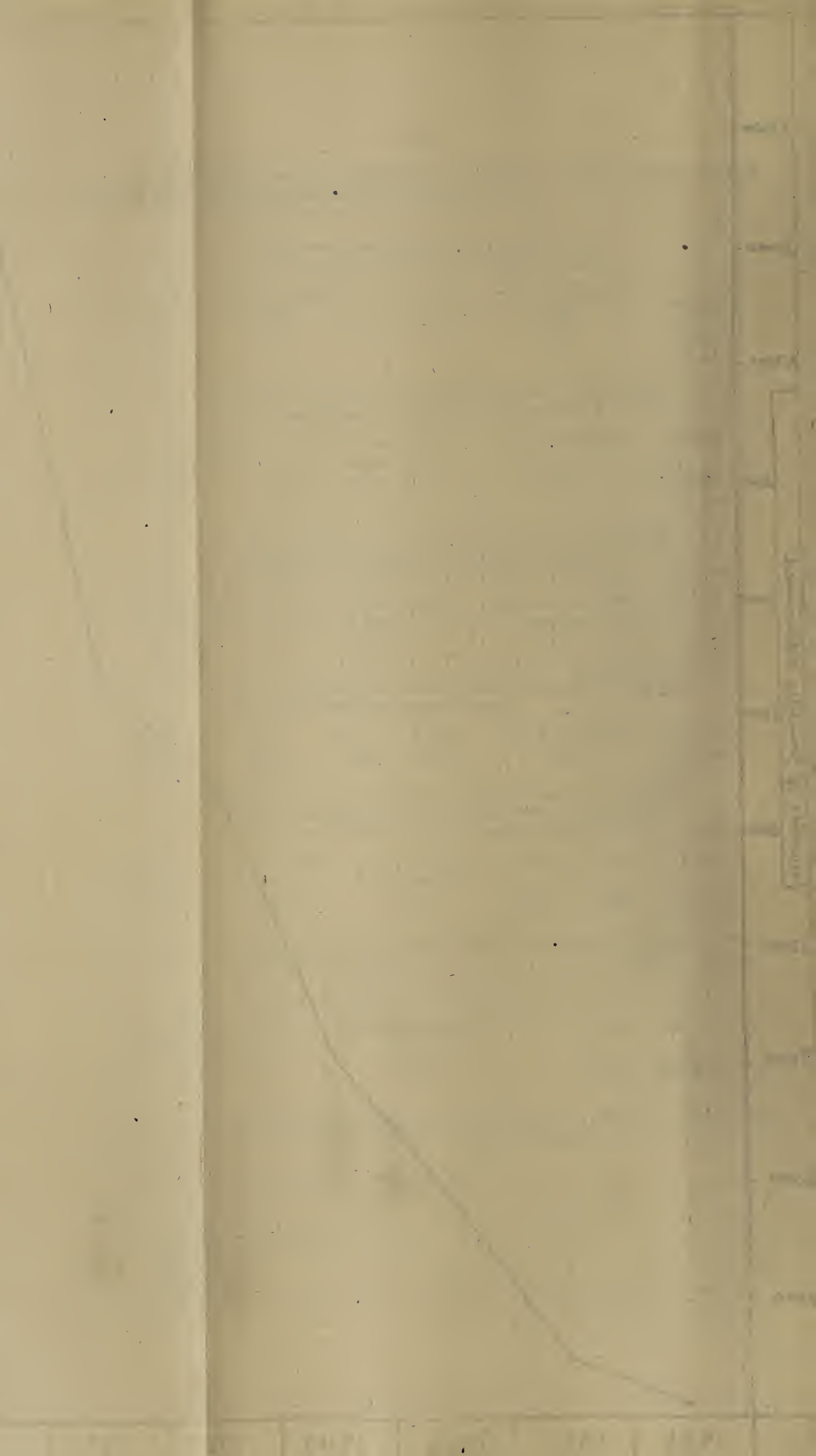
No. of specimens done free of charge	No. of specimens charged	Total	Rs.	A.	P.
19,127	13,962	33,089	16,560	14	0

The working hours of the laboratory are from 11 A. M. to 5 P. M. The specimens are received till 1 P. M. daily on all working days

The Staff of the laboratory consists of:

Pathologist	1
Assistant Pathologist	1
Technicians	3
Clerk	1
Attenders	3
Peons	2





The laboratory is kept open till 1 P. M. on Government holidays to report on cultures.

Programme for Examination of blood

- | | | | |
|---|-------------------|-----|----------------------|
| 1 | Manicke test | ... | Daily |
| 2 | Kahn test | ... | Wednesdays & Fridays |
| 3 | V. D. R. L. tests | ... | Saturdays |

Sputum for examination for A. F. B. is done free of cost as also throat swab for C. Diphtheria.

Schedule rates for the examination of the specimens is as follows :

Blood ; ordinary examination	Rs. 1 per test.
Agglutination test	2 "
Manicke	2 "
Kahn	2 "
V. D. R. L.	2 "
Urine for qualitative examination	1/8 "
Urine for qualitative examination sugar	1 "
Motion for Microscopic examination	1 "
Motion for culture examination	2 "

For private companies who refer cases for examination, charges at Government rates i. e. Rs. 3/-and Rs. 5/-per test for motion examination is levied.

ASHOK VIHAR

	1952	1951
No. of families on rolls on 1st January	264	256
No. of families enrolled during the year	88	61
No. of families removed	52	55
No. of families on rolls on 31st December	300	264

Social contact :

167 visits to the nearby slums and 84 visits to the improved slums were made by the staff. The areas were free from epidemics. Inspite of poverty and illiteracy, the general health level in these areas continued to show marked improvement.

The mobile dispensary service started during the year was popular. Medicines were dispensed to sick patients on a hut-to-hut service basis.

Creche :

	1951	1952
No. of children on rolls at the commencement of the year	69	69
No. of children admitted during the year	46	41
No. of children removed during the year	47	40
No. of children on rolls at the end of the year	68	70

Of the 66 children treated for worms, 34 were positive and were treated suitably. 23 children were deloused.

72 children had T. A. B. inoculations and 40 had whooping cough inoculation. Primary vaccination was given to 3 children who were not protected

and 71 had re-vaccination. 41 children were Montoux-tested all with negative reaction and were given B. C. G. vaccination. The care of children and their proper upbringing was discussed with the mothers at meetings arranged for the purpose periodically.

Women's Section : Members were taught useful handicrafts like sewing, knitting etc., and were advised on matters relating to health and efficient management of the family. The average daily attendance was 20 on week days and about 40 on holidays.

400 uniforms of other members of the centre were mended. 113 garments were made. 24 towels and 56 bed-sheets were border-stitched. 12 baby dresses and other items like hand-bags, towels, pin cushions, fancy rag-dolls etc., were made. A few of the members were taught the use of the sewing machine.

They were periodically advised on the care of expectant mothers and children, preventive inoculations, family planning, personal and social hygiene, family budget, nutrition and recreation.

Pallanguzhi, chokkattam and carrom attracted a few. They helped in decorating the centre on festive occasions.

Girls' Section : (Girls between 6 and 14 years of age)

The average daily attendance on week days was 55 and 65 on holidays. They were taught personal hygiene, hand-work, needle-work, music, dancing and recreation.

Talks on regularity in attending the schools, and the centre, health habits, usefulness of preventive inoculations, health check-up, civic sense etc., were given.

Excursions to Marina, Red Hills lake etc., were arranged. Navarathri was celebrated fittingly.

A chit fund started during the year for encouraging thrift proved helpful to members. Many of the girls utilised the facility for buying books and clothes.

The general health level continued to show improvement.

Boys' Section: The average daily attendance was 40 on week days and 60 on holidays. The activities of this section were similar to those of the Girls' Section with suitable modifications. Boys took to more vigorous out-door games like football etc.

Men's Section: The average daily attendance was 40 on week days and 70 on holidays. Talks on self-help, dignity of labour and other allied subjects were given regularly. Table-tennis, carrom, bagatelli and boxing were popular with the members. Indigenous games like chedugudu etc., were encouraged. Games like Volley ball, Badminton etc., attracted them much.

The members staged two dramas. The musical instruments provided in the centre were made good use of by the members. Excursions were arranged to Covelong and other places.

General

Health over-haul: Each individual in every family underwent a general health check-up every year. Specialists in E.N.T., Eye and Teeth also examined them. Attention was directed more towards a study of the history of the health condition of the members than to the temporary illness itself. The need for personal hygiene was emphasised. There was no serious illness among members during the year.

Details of Health overhaul

		General	Dental	Eye	E.N.T.
1st Examination	...	399	372	428	344
2nd	"	241	218	212	198
3rd	"	378	263	255	268
4th	"	100	81	93	97
5th	"	19	4	7	5
Total	...	1137	938	995	912

466 of the 728 members examined subsequently showed an improvement in weight and 75 maintained weight 187 persons showed a decrease in weight.

Inspits of poor economic and housing condition, members kept up fairly good health due to the preventive, educative and curative activities of the centre.

Maternity Section: 107 cases inclusive of 13 cases carried over from 1951 were examined ante-natally. Of these, 63 deliveries were conducted in Ashok Vihar during the year and 18 either in hospitals, Child Welfare Centres or houses. 6 cases not previously examined ante-natally also delivered at Ashok Vihar.

Dispensary: 10,946 prescriptions were dispensed during the year.

Pathological investigations

Blood examination	...	161
Urine	...	59
Motion	...	52
Sputam	...	76

Reference to hospitals

Government General Hospital	...	141
Government Hospital for Women and Children, Egmore...		47
Corporation Tuberculosis Clinic	...	67
Government Ophthalmic Hospital	...	14
Family Planning Centre (Women & Children's Hospital)		6
Government Stanley Hospital	...	4
Corporation Venereal Clinic	...	2
Kasturba Gandhi Hospital	...	2
Rainy Hospital	...	1
Corporation Leprosy Clinic	...	1
Government Mental Hospital	...	1

Canteen

		Rs.
Receipts	...	2,300 0 0
Expenditure	...	2,306 10 7

Auditorium: 104 film shows were arranged during the year, thanks to the British Information Service, United States Information Service and the British Council.

General: Of the 20 children admitted in schools, 2 were admitted in orphanages, 2 in the Harjan Hostel and 2 in the Children's Aid Society. 1 woman member was admitted in the Vocational Training Institute, Chetpet. 2 of the women members got married during the year.

Vocational Training Section: The following stationary articles were made by the members during the year:

File pads	...	500
Pocket notebooks	...	140
Envelopes	...	2000
Bound notebooks	...	150
Students' notebooks	...	20

The IVth Anniversary was celebrated between 30-8-1952 and 2-9-1952 under the presidency of Sri A. B. Shetty Minister for Health, Government of Madras. The Deputy Mayor distributed prizes to winners in the annual sports.

To encourage boys in the slums to take interest in team games, the Mayor's Cup Annual Football Tournament was conducted on 2-3-1952. The Worshipful Mayor presided on the occasion and the Deputy Mayor distributed the prizes to the winners and runners-up.

Winners : The Youth Reformation League, Choolai.

Runners-up : The Brislee Nagar team, Parambur Barracks.

Skimmed milk powder received from the Indian Red Cross Society and the Director of Public Health, Madras, was distributed daily for 4 months among the following:

Boys under 12 years of age	...	42
Girls	...	43
Toddlers	...	12
Infants	...	17
Expectant mothers	...	7
Nursing mothers	...	27
Sick mothers	...	11

A student from the School of Social Service, Delhi, underwent training in medico-social work at the centre for 3 months. Students from the various medical colleges, nursing schools, arts colleges and schools of social services visited the centre during the year.

Donations: Our thanks are due to Lady Nye for her donation of a sum of Rs. 500 for stitching garments for the members who have been regular and to the Guild of Service, Madras, for their Christmas grant of Rs. 30. The Guild of Service was also kind enough to allot Care Food parcels, garden tools and library books from time to time. The Worshipful Mayor, Sri T. Chengalvarayan, donated a sum of Rs. 25 towards a treat for boys and girls of Ashok Vihar and we are thankful to him for his kind thoughts in contributing the amount.

Visitors: The following visited the Centre during the year ;

Dr. and Mrs. Alan Greg of the Rochefelier Foundation, New York.

Sri N. Murugesu Mudaliar, Deputy Secretary to Government, Food and Agriculture Department.

Mr. Ellen Broe, Director, Florence Nightingale Foundation, England.

Sir Archibald Nye.

Dr. John Gordon, Professor of Harvard University, U.S.A.

Srimathi Kamini Devi, Raj Bhavan, Guindy.

Dr. Bowers, Salt Lake City, U.S.A.

Miss. D. Caroline Bridges, General Secretary, International Council of Nurses.

Miss Evelyn Beirseay, Social Service Attache to the United States Embassy at Delhi.

Mr. John Seymore, B.B.C. London,

Dr. T. H. Devay, Professor of Tropical Hygiene, School of Tropical Medicine Liverpool.

Sri C. D. Deshmukh, Finance Minister, Government of India.

Mr. Robert J. Mckanister, Cultural Affairs Assistant. U.S.I.S.

Mr. Morrison of New Zealand.

Dr. Leoui H. Bauer, President, American Medical Association and Secretary General, World Medical Association.

Dr. Malcolm H. Merril, M.D., State Department of Public Health, California.

Dr. Christopher Tietz, M.D., Demographer, Department of Statistics Washington.

Dame Leslie Whately, World Director, Girl Guides.

Dr. L M. Han, M.D., D.P.H., D.T.M. & H., Medical Officer, W.H.O.

Rt. Hon'ble Hilary Marquand, M.P., Minister for Health, England and Wales.

Medical Inspection of Corporation School Children

Staff: Four Medical Inspectors and three Medical Inspectresses continued to work during the year.

Routine of work: In view of the shortage of Medical Inspectors and the steady increase in the number and strength of the schools, it was found difficult to examine all the children in all the schools annually. Consequently the routine of work had to be changed. From December 1952 it was decided to confine routine medical examination of children to three stages only during their elementary school career viz, during the first year when admitted (entrants), during the middle of their course and during their final year. It is hoped to cover a larger number of schools by this change.

Out of 243 elementary schools 137 were visited and medical examination of children conducted. Treatment was given to the defective children. The total number on each roll in all the schools was 42,490 boys and 31,038 girls. There were 23,649 boys and 17,354 girls on rolls in the schools visited. The average attendance in the schools visited was 16,727 boys and 14,526 girls. 17,287 boys and 13,003 girls were examined during the year. Out of them 11,036 boys and 7,394 girls were entrants, 6,277 boys (36.31%) and 4,605 girls (35.41%) were defective and in need of treatment.

Personal hygiene: 809 boys (4.68%) and 175 girls (1.35%) were dirty in their person and clothing. Instruction on personal hygiene were given to them and also taught in the classes by the staff. In schools where water facilities were adequate they were bathed.

Mal-nutrition: 2,433 boys (14.07%) and 1,715 girls (13.42%), were undernourished as against 16.98% and 14.87% respectively in the previous year. Shark liver oil and calcium lactate were given to them for improving their condition. 1,998 boys (11.56%) and 830 girls (6.38%) had dental and oral complaints. 1,504 had stomatitis and were treated at the schools with benefit. The children had their caries teeth extracted.

1,500 had enlarged tonsils and received appropriate treatment. 64 of them had their tonsils removed by operation at the hospitals for gross infection. 9 had their vision corrected by glasses. Others having visual defects of minor degrees improved by a course of vitamin oil. 173 children received treatment for discharge from the ear. 4 were defective in hearing and were provided seats near the teacher within their range of hearing. 4,905 defective children had courses of vitamin oil and calcium in the schools. 2,101 children having stomatitis and other allied defects received yeast with benefit.

Circulatory and respiratory diseases : 74 boys (0.43 %) and 254 girls (1.95%), had defects relating to heart and blood. 216 anaemic children improved by treatment. 5 had enlarged spleen due to Malaria and they were suitably treated.

Diseases of bones and joints : 816 had deformities of chest due to rickets in childhood, 20 had infantile Paralysis and functional disorders of nerves. All of them received suitable treatment.

Infectious and contagious diseases : 565 boys (3.27%) and 738 girls (5.68 %) had infectious and contagious diseases, the corresponding percentages for the previous year being 6.17 and 6.97 respectively. 966 children were suffering from scabies. 238 had signs and symptoms of Hansen infection in early stages. All of them received treatment. There was good improvement in them.

General preventive work : 5,458 children were revaccinated 14,513 were inoculated against Cholera and 930 against Typhoid.

Other diseases and defects : 14 children underwent operation for Phimosi.

Medical Treatment : Diseases relating to mal-nutrition and vitamin deficiencies were prominent. They were all treated at the schools with the assistance of the teachers. Midday meal, vitamin oil and calcium lactate were given to them. The balance of the stock of Care food packages containing milk powder, cheese, butter and beans left over from the previous year's supply was distributed to 210 children in seven selected schools and lasted for 24 days.

8,629 children having minor ailments were treated at the schools. 885 were sent to Corporation Dispensaries for treatment of ailments that could not be attended to at the schools. 773 were sent to Government hospitals for treatment of more serious ailments.

Re-inspections : 312 revisits were paid to schools after the routine visit for treatment and re-examination of the defectives. 11,301 re-examinations of children were done during these revisits.

Co-operation of parents and teachers : 1,525 parents of children were present at the schools during the inspection and treatment of their children. The details of medical attention bestowed on their children were explained to them and their co-operation sought. Adequate arrangements were made by the school staff for the treatment of the ailing and good results were obtained.

School sanitation : Sanitary defects regarding accommodation, ventilation, sunlight, latrine, playground and water supply were pointed out in regard to the schools inspected and suggestions were given to remedy them.

Midday meals : 9,523 children in 186 schools situated in poor localities were provided with midday meals on school working days. The Medical Inspectors supervised the arrangements made for distribution of the food.

Health Education : 87 lectures and 106 talks on health subjects were arranged in the schools : The total attendance at these lectures was 11,016.



Hearse



Supply of meals to School Children

Sanitation.

General : Dr. S. E. D. Masilamani continued to be the Health Officer during the year.

The Health Administration of the City was in charge of the Health Officer assisted by five assistant officers.

Sewers and F.O.Ls : The City is sewered to the extent of approximately 60 percent of its area. 4.65 miles of sewers were laid during the year as detailed in the appendix. 823 flushout latrines were constructed departmentally and 662 by parties direct. 14 public conveniences were constructed during the year. There were 406 public conveniences in the City at the end of the year.

Cattle-yards : 1,695 cases were dealt with during the year involving just over 10,000 heads of cattle. Licences were refused in respect of 76 cattle-yards. 35 were pending consideration at the end of the year. The four cattle-yards located as detailed below were maintained by the Corporation in a satisfactory condition.

Basin Road	78 stalls for 156 animals
Kosapet	35 stalls for 70 animals
Chintadripet	29 stalls for 58 animals
Triplicane	10 stalls for 20 animals

Offensive trades : 12,116 out of 12,696 applications for licensable offensive trades were licensed during the year. 350 cases were refused. Details of offensive trades licensed during the year are found in the appendix.

Dhobykhanas: The Corporation maintained all the six dhobykhanas in (1) Robinson Park (2) Conran Smith Nagar (3) Suryanarayana Chetty Street (4) Venkatadri Naicken Street (5) Chetpet and (6) Kosapet in a satisfactory condition.

Food Control: There were 7 public and 42 private markets. Conservancy Inspectors were in charge of the sanitation of Moore Market and Fruit Market and the divisional staff looked after the sanitation of the other markets. The additions and alterations to the several parts of the Moore Market which were reported to be in progress in 1951 were completed this year.

Private markets were inspected frequently and wherever necessary effectives measure were taken to prevent fly nuisance by D.D.T. spray etc. Regular drives were launched against street vending of exposed as well as noxious food-stuffs. Over 12½ tons of such food-stuffs were destroyed. Education was carried on among the public on the harmful effects of eating such exposed food-stuffs.

Meat supply : With a view to ensure the supply of wholesome meat to the citizens, sale of meat of only such animals as were slaughtered in the slaughter houses and passed by the Veterinary Assistant Surgeon in charge of the Slaughter Houses was permitted. Each carcass was stamped with an indelible mark as a token of its having passed the test for fitness for consumption. Organs of animals which were found unwholesome were condemned and destroyed.

The out-turn of work in the slaughter houses was as follows :

Slaughter House	No. of animals brought	No rejected after examination	Number slaughtered	No. of carcasses condemned.		No. of organs condemned
				whole.	part.	
For sheep, Perambur	1,16,168	4,939	4,11,229	13	4294	12,058
For sheep, Saidapet	—	—	53,074	—	—	610
For cattle, Perambur	35,044	772	34,272	2	2249	11,989
For pig, Perambur	545	10	535	2	342	584

66 stray pigs found straying were arrested. They were slaughtered in the Pig Slaughter House and the carcasses returned to the owners after collecting the prescribed penalty.

In accordance with G.O. No. 4109 H, dated 18-12-1942, cattle as detailed below were saved from slaughter :

Cows	Bulls	He-buffaloes	She-buffaloes	Heifers	Total
893	60	72	363	199	1587

Valuable specimens have been preserved carefully to serve as exhibits for students from the various medical institutions in the state.

Anti-rabic measures:—Control of rabies was sought to be ensured by 1. licensing of dogs and 2. destruction of stray unlicensed dogs. 8 licensed dog-catchers were engaged for arresting stray dogs and they worked under the control and supervision of the Superintendent of the Lethal Chamber. Two specially designed motor vans were provided for this purpose. Stray dogs in the city were rounded up and removed to the Lethal Chamber in Basin Road where they were electrocuted. Details of work in the section are as follows :

No. of dogs left over on 34-12-1951	95
No. of dogs caught during 1952	24,637
No. of dogs claimed by owners and returned	2,2 3
No. of dogs given to Medical Colleges	569
No. of dogs electrocuted	21,848
No. of dogs left undisposed	132

Zoological Gardens 1952—'53

The concept of National Park in India is still in its infancy. There are many sanctuaries and reserve forests in India. The importance of preserving wild life has now been realised and possibilities for developing National Parks with natural beauty are being explored.

Situated centrally in the City of Madras in the People's Park, the Madras Zoological Garden is completing its centenary this year. The variety of wild species it houses affords ample opportunities for education both to the young and old. During the year, many gifts were received, prominent among them being a fine specimen of South Indian Bison, kindly secured by Sri M. Kesava Unni Nayar, Chief Conservator of Forests, Madras. The Government of Assam supplied at cost a pair of "Tragopan Pheasants".

Visitors: The total number of persons who visited the Zoo during the year was 3,34,999. 96,999 were children.

Honorary Visitors: The Zoo continued to enjoy the benefit of help and advice of the Honorary Visitors, Sri M. Kesava Unni Nayar, I.F.S., Sri A. A. Nayar, Mr. C. E. Holland and Sri P. V. Ramanujam Chettiar. The Honorary Visitors met four times in the year and considered the question of the extension to the Zoo, re-alignment of cages, construction of a suitable canteen etc. Of the many suggestions made, only the location and construction of a combined Rhino and Hippo enclosure was taken up at the end of the year. It is hoped that with continued help and encouragement from the public and subject to availability of funds, the Zoo will record greater improvement in the coming years.

Livestock: At the commencement of the year, there were 631 livestock in the Zoo comprising of 173 mammals, 436 birds and 23 reptiles.

Acquisition through births, purchases and gifts numbered 83, reduction due to death, sale and exchange, 58. There were thus, 661 animals consisting of 182 mammals, 456 birds and 20 reptiles at the end of the year. A statement showing additions and disposals in each class under different heads is furnished below :

Class	No. at the beginning of the year	Additions				Disposals			No. at the end of the year
		Gifts	Ex-change	Pur-chase	Birth	Sale	Deaths	Ex-change	
Mammals ..	173	11	5	...	36	29	13	1	182
Birds ...	436	1	...	6	26	...	6	7	456
Reptiles ...	22	...	..	...	...	...	2	...	20
Total ..	631	12	5	6	62	29	21	8	658

Additions :

1. Purchases :

- 1 A pair of Tragopan Pheasants
- 2 One Grey Langur
- 3 Two Plymouth Rock Cocks
- 4 One Black Pondicherry Vulture
- 5 One Sea-gull

2. Gifts :

- 1 One pair of Sloth bear cubs from Madras Forest Department
- 2 One pair of Elephant calves do
- 3 One Bison cow calf do
- 4 One pair of leopard cubs from Mr. Reddy Sap of Vizag
- 5 One leopard cub from Mr. Donnetti, A
- 6 One leopard cub from Mr. A. K. Thamba
- 7 One sonneretti jungle cock from Dr. Seetharama Rao
- 8 One pony from Mr. Numberumal Naidu
- 9 One spotted deer from Messrs. Vauhini Studio

3. Births and hatchings :

Mammals

1	Nilgai fawn
3	Lion cubs
27	Rabbits
4	Spotted deers
1	One Donkey filly

Birds

6	Manilla ducks
6	Rhode Island red
1	White leghorn
1	Black Minorcha
12	Budgerigards

4. *Exchanges*: A female Nilgai was secured from Dr. Daikison in exchange for three pairs of Budgerigards. In addition, a pair of Sooty Mangabeys and a female Anuba Baboon are being acquired from Mysore Zoo on exchange basis

Disposals :

1. Sales :

3	Lion cubs
1	Leopard
3	Bonnet Monkeys
18	Rabbits
4	Sambur Deer
1	Jackal

2. *Deaths*: Every animal that died in the Zoo was autopsied and examined carefully to determine the cause of death, so that other animals of the species may be suitably treated and saved in time. There were 29 deaths during the period under review and most of them died of old age or of natural causes. Details with causes of death are furnished below :

Mammals

1	Female Chacma Baboon	...	Pericarditis
1	Malabar Squirrel	...	Abscess on the liver
1	Stump tail monkey	}	Senility
1	White doe		
1	Bear cat		
1	Wallaby		
1	Lion		
1	Leopard		
2	Mouse deer		
2	Grey Langurs		
1	Indian Gazelle		

Birds

1	Green Pen-fowl	}	Senility
1	White Pea-fowl		
1	Green pigeon		
1	Macaw parrot		
1	Black swan		
1	Obscuro Peasrnt		

Reptiles

2	Snakes common	...	Senility
---	---------------	-----	----------

One Albino Buck, out of the surplus stock, was presented to the Raj Bhavan Park. An Albino Pea-hen was offered to Dr. S.C. Law, President of the Board of Management of Calcutta Zoological Gardens and a pair of fancy pheasants from his personal collections are expected in exchange.

Improvements. An automatic refrigerating unit with water pipe and electric motor connections was installed under an ornamental umbrella shed within the Zoo near the Lions' moat. A separate hatchery section as an adjunct to the fowl yard was provided. Enlosures for jackals and Porcupine



Supply of meals to School Children



Reclamation work—Shenoy Nagar

were renovated and re-painted. Colour washing of cages and painting of name-boards were done. Construction of a combined Rhino and Hippo enclosure is in progress.

Gardens : Attention was bestowed on the maintenance of the ever-greens throughout the year. A good number of annual pot plants were raised.

Amenities : Joy rides on elephants and camels continued to be arranged on holidays and Sundays during the year. Pony rides were arranged for children to the Zoo and a nominal fee of one anna per child per round was collected. Both the rich and poor children enjoyed the amenity provided.

Revenue : A sum of Rs. 96,603-13-0 was collected by way of fees for admission to the Zoo and for parking cycles.

Boating : Owing to continuous drought, the Zoo lake was completely dried up in the earlier part of the year and pleasure boats could not ply. But from May 1952, the lake became filled up and boating was resumed. This right was auctioned for Rs. 2,000 for the year.

Other receipts : The following are the details of proceeds realised from other sources :

		Rs.	A.	P.
Hire of animals	...	1,675	0	0
Sale of animals	...	6,592	0	0
Joy rides on elephants	...	480	2	0
Sale of elephant dung	...	210	0	0
Stallage charges	...	180	0	0
Sale of hatchable fowl eggs	...	238	8	0
Admission of Cine Cameras	...	78	0	0
Film shooting within Zoo	...	150	0	0
Sale of Zoo guide	...	632	0	0
Joy rides on ponies	...	80	6	0
Joy rides on camels	...	32	8	0
Total	...	10,845	8	0

Disposal of the dead : Proposals are under consideration for removing all burial grounds in the city to the outskirts. Even as it is, the public have to cover long distances for disposing the dead. If the proposal for shifting the burial grounds to the outskirts is to take shape, the need for providing some fast and cheap transport for dead bodies will be felt very keenly especially by the poorer section of the population. In order to meet such demand, a motor service specially designed was started from 1-4-1952 for carrying the dead bodies to the different burial grounds in the city. A fee of Rs. 5 is payable for each such service within the city and for places within 3 miles from the city limits an additional fee of As. 8 per mile is collected.

During the year, 372 services were rendered and the revenue therefrom amounted to Rs. 1,882-8-0. It is proposed to expand this service if the demand should justify it and also when the proposal for shifting the burial grounds to the outskirts takes shape.

HEALTH EDUCATION

Two Medical Officers with a plan for Health education work were entrusted with the task of educating the public on the need for healthy and clean living. Assisted by the Divisional Sanitary staff, they gave 4,207 talks in the several divisions of the city.

The first part of the film on "Fight against Epidemics" dealing with Small-pox was completed and previewed by the Worshipful Mayor and the Councillors this year. The second part dealing with Cholera is progressing and it is hoped that it may be possible to release the entire film for the general public next year.

The Department took part in the All India Khadi, Swadeshi and Industrial Exhibition this year.

CARE OF DESTITUTES

The diseased, the infirm and the homeless were taken care of by the Corporation in the institutions maintained for the purpose viz.,

- 1 Special Home for the Infirm and Diseased
- 2 Work House for the Able-bodied
- 3 Poor House
- 4 Orphanage
- 5 Homes for the Homeless

1. SPECIAL HOME

The report on the working of the institution in 1952-53 as submitted to Government is reproduced below :

" The year 1952-53 opened with 309 inmates in the Special Home. The number of inmates admitted during the year was 580 of which 110 were those transferred from the Corporation Work House under orders of the Magistrate. Among admissions made during the year, 79 were ex-inmates of the Home. There were 35 disposals; 444 inmates who served their detention period were discharged; 18 inmates were discharged before the expiry of the detention period by the Commissioner, Corporation of Madras, under Rule 32 A of the Special Home Rules; 15 inmates suffering from mental defects were transferred to the Government Mental Hospital, Kilpauk; 3 inmates escaped and 55 inmates died. A statement of the particulars is given below according to sex:

	Males	Females	Total	Grand total
Strength on 1-4-52	261	48	309	
No. admitted during '52-'53	379	91	470	} 580
No. transferred from Work House	90	20	110	
No. discharged after expiry of the detention period	379	65	444	} 535
No. discharged under Rule 32 A by the Commissioner	12	6	18	
No. transferred to Government Mental Hospital	10	5	15	} 3
No. escaped	1	2	3	
No. died	43	12	55	} 354
Strength on 21-3-1953	285	69	354	

The beggars admitted were between 16 and 84 years of age.

The nature of diseases and infirmities of the 580 cases admitted during the year are furnished in the following statements:

Disease or Infirmary		Males	Females	Total
1. Leprosy - infective	...	136	16	152
2. Leprosy - Non-infective	...	85	1	86
3. Alimentary system	...	3	...	3
4. Nervous system	...	44	8	52
5. Respiratory system	...	16	5	21
6. Cardiovascular system	...	15	2	17
7. Special organs	...	13	3	16
8. Genito-urinary system	...	6	3	9
9. Venereal	...	11	3	14
10. Skin	...	26	8	34
11. Mental	...	10	2	12
12. Elephantiasis	...	2	2	4
13. Osseomyelitis	...	5	2	7
14. Tuberculosis	...	5	1	6
15. Filariasis	...	2	1	3
16. Infirm and crippled	...	9	1	10
17. Other diseases	...	82	52	134
Total		470	110	580

The detention period of the inmates varied from 3 months to 2 years.

At the time of admission, the cases were found to be in a very bad state of health, most of them being extremely emaciated on account of starvation and mal-nutrition, besides suffering from chronic incurable diseases. The leprosy cases especially were stinking with multiple ulcers. They were all given good food and appropriate medical treatment. The leprosy cases were treated with bi-weekly injections of hydrocarpus oil and sulphones tunisons and ulcers were dressed daily. Cases of other ailments were also suitably treated as a result of which most of the inmates showed remarkable improvement in general health, appearance and weight. Fortnightly weighment of the inmates revealed that they gradually put on weight almost of them as much as 10 to 30 lbs.

Cases requiring special treatment were treated in the following medical institutions :—

S. No.	Name of medical institution	No. of cases treated
1	Government General Hospital	5
2	Government Stanley Hospital	1
3	Government Royapettah Hospital	2
Total		8

After the completion of the detention period, 444 inmates were discharged —remissions upto 40 days were granted for good conduct and work. At the instance of the Superintendent of Police in the City and the Revenue Authorities in the mofussil followed up the discharged inmates. Their reports show that as many as 12 ex-inmates have given up begging, some of them earning their livelihood by cooly work, cultivation tailoring, vending vegetables, etc., and the others being looked after by their relatives.

Three inmates escaped during the year. These escapes have been duly reported to the police. Through the efforts of the Home staff of the institution, one of the escaped inmates was apprehended and he was committed back to the Home.

There were 16 deaths amongst the 309 residual cases of 1951-52 and 39 from the 580 cases admitted during the year. The mortality rate was 6.2%. The causes of death are as below :—

cause of death			Males	Females	Total
Leprosy with complications of other diseases.	Enteritis	...	9	1	10
	Pulmonary Tuberculosis	...	3	...	3
	Nephritis	...	2	3	5
	Heart failure	...	1	1	2
	Pyarunic abscess	...	...	1	1
	Septicaemia	...	6	...	6
	Enteritis	...	9	1	10
	Pulmonary Tuberculosis	...	3	...	3
	Nephritis	...	3	1	4
	Heart failure	...	2	2	4
	Valvular diseases of Heart	...	2	2	4
	Dysentery	...	3	...	3
	Cancer	...	...	1	1
	Filariasis	...	...	1	1
	Total	...	43	12	55

The staff of the institution consisted of the following :—

1. Superintendent-cum-Medical Officer	...	1
2. Nurses	...	4
3. Clerk	...	1
4. Compounder	...	1
5. Chief Warder	...	1
6. Second-grade Warders	...	13
7. Male Ward Attendants	...	5
8. Female Ward Attendants	...	5
9. Peons	...	3
10. Cooks	...	4
11. Barbers	...	2
12. Gardeners	...	1
13. Dhobies	...	3
14. Male thozhilalis	...	8
15. Female thozhilalis	...	5

Besides the official, ex-officio and non-official visitors who inspected the institution, the following distinguished persons also visited it during the year.

1. Sri R. V. Wardekhar, B.Sc., M.D., Secretary, Kusht Nivarak Samiti.	
2. C. A. Dhyriam, Secretary, Red Cross, Madras.	
3. Mrs. R. M. Taylor	
4. „ J. R. Core	
5. „ A. Moessar	
6. „ Paul C. Sherbert	Members of the American community
7. „ Donald C. Moran	
8. „ H. M. Osevell	
9. „ Harold Josef	
10. „ P. J. Mac Alisser	

11. Miss P. R. Giviga
12. „ Padminiamma
13. „ S. R. Subbulakshmi
14. „ C. C. Auda Bai
15. „ Sree Devi
16. „ Sree Devi Nair P.
17. „ N. Chandranuki
18. „ P. Lakshmi
19. „ M. K. Padmavatiamma
20. Sri S. G. Dosai of Nagpur Municipality.
21. Miss V. Ford of the World Health Organisation.
22. Dr. M. B. Prabhu, M.D.
23. Sri M. A. Gani, Deputy Secretary to the Government of West Bengal (Relief Department).
24. Sri S. Ghosh, Controller of Vagrancy, West Bengal.
25. Sri V. C. Subbaroya Gounder of Coimbatore Municipality.

} Social workers deputed by
the Travancore Devasam
Board

All the visitors were very much impressed with the upkeep of the institution and the care bestowed on the inmates.

Many philanthropic persons were kind enough to give free gifts of food or arrange entertainments noted below :—

Food gifts

Date	Occasion	Nature of gift	Name of Donor
23-5-1952	12th Day ceremony of Dr. U. Rama Rao.	Rava Kesari and milk pudding costing of Rs. 40.	Dr. U. Krishna Rao.
24-6-1952	Ramzan ...	Coffee & Pongal ...	Arranged by Supdt.
21-7-1952	Adi Amavasai ...	Wheat halva ...	Manickchand Betuola.
15-8-1952	Independence Day ...	Mutton kurma & Coffee.	Arranged by Supdt.
22-8-1952	Paiyushamaparvu ...	Laddu, karaboondi, iddlis with chutney and sambar.	Sowcar Indrachand Galada & Parasmull
19-9-1952	Navarathri ...	Wheat halva ...	Sowcar Indrachand Galada.
26-9-1952	Ayudha Puja ...	Pongal & coffee ...	Arranged by Supdt.
3-10-1952	Corporation Inauguration Day.	Payasam, vadai & appalam.	Corporation
17 10-1952	Deepavali ...	Wheat payasam ...	Dr. M. D. Prabhu.
8-11-1952	Birthday of donor's grandson.	Laddu, jangry, samia & chips.	Mrs. Kailas B. Mehta.
13-11-1952	Death anniversary of Proprietor.	Laddu, jangry, Ghatia plantains.	Surajmull Dallubhai.
13-11-1952	Death anniversary of to the donor's father.	2 iddlies with chutney for 10 days.	Amritlal D. Shaw.
21-11-1952			
30-11-1952	Karthika Deepam ...	Pongal & coffee ...	Arranged by Superintendent.
27-12-1952	Vaikunta Ekadasi ...	Do. ...	Corporation

Date	Occasion	Nature of gift	Name of Donor
26-1-1953	Republic Day	... Wheat halva, milk payasam, vadai, appalam, pansu-pari, smoke.	Corporation
16-3-1953	Telugu New Year's Day.	Nukkar pongal, coffee & betelnut.	Sowcar Chordia. Khorvaraj
13-4-1953	Tamil New Year's Day.	Do. ...	Corporation

Free Dramatic Performances

14-6-1952	Periodical	... Mahishasura Samharan (Tamil)	Staff and inmates
15-8-1952	Independence Day	... Tahsildar Comic ...	Arranged by Superintendent
31-12-1952	New Year	... 'Who am I' Drama	Tamil Krishnan and party.

These feasts and dramatic entertainments besides the daily radio programmes and indoor games contributed in making the inmates happy and contented.

With a view to keep the inmates engaged and benefit them by way of occupational therapy, weaving of corah mats was started on 28-11-1952 and the manufacture of bandage cloth on 2-1-1953. With materials costing Rs. 40-8-4, 36 mats valued at Rs. 72 were produced and with the raw materials costing Rs. 104-12-4, 476 yards of bandage cloth valued at Rs. 193-6-0 were produced.

In the open spaces available in the institution, vegetables such as tomatoes, drumstick, pumpkin, melon and mullangi and various kinds of greens were grown. Seeds worth Rs. 11-5-0 were purchased from the Government Department. The total garden produce weighing about 4470 lbs. and costing about Rs. 800 replaced the contractor's supply on 58 occasions.

The expenditure incurred by the Corporation during the year under report on the maintenance of this institution was Rs. 1,09,020.4-7."

WORK HOUSE

The report on the working of the Work House in 1952-53 as submitted to Government is reproduced below :

"The strength of the Work House on 1-4-1952 was 173. During the year, there were 426 admissions including those under remand and 299 cases including those under remand, were discharged. Among those released were 3 inmates (2 males and 1 female), who were discharged on the orders of the Commissioner, Corporation of Madras. under Rule 35 A of the Work House Rules. 110 inmates were transferred to the Special Home with the order of the Magistrate; 5 inmates escaped (one of them escaped from Government Stanley Hospital when he was under treatment there). These escapes were reported to the police for necessary action. There were three deaths in the Work House during the year.

A statement of admissions and disposals according to sex is given below :

	Males	Females	Children	Total
Strength on 1-4-1951 ...	156	15	2	173
No. admitted during the year including those kept under remand ...	352	64	10	426
No. detailed in Work House under remand ...	92	15	...	107
No. released including those under remand ...	257	38	4	299
No. escaped ...	4	1	...	5
No. died ...	2	...	1	3
No. transferred to Special Home ...	90	20	...	110
No. sent to Mental Hospital ...	3	...	...	3
Strength on 31-3-1953 ...	152	20	7	179

The committal periods of the inmates ranged from 3 months to 2 years.

	3 months.	6 months.	1 year.	2 years.
Males ...	8	10	238	4
Females ...	1	1	48	...

The average weight of inmates when admitted was 89 lbs. and the average weight for those released was 92 lbs.

The ages of the inmates varied from 15 to 70.

There are two sick wards—one for the males and the other for the females. Minor ailments are treated in the Work House itself by the Superintendent. During the year, 6 cases were treated at the Government General Hospital and 9 cases were treated at the Government Stanley Hospital and 9 cases at the Infectious Diseases Hospital.

Able-bodied beggars committed to the Home are trained in textile weaving, rope making, mat weaving and gardening. Cooking and washing of clothes are done by the inmates themselves.

The statement below shows the number of inmates trained in the various sections :

	Males	Females
Weaving ...	38	...
Rope making ...	100	20
Mat weaving ...	6	...
Tag making ...	1	...
Gardening ...	13	2
Cooking ...	5	...

There are two gardens in the Work House—one in the male's section and the other in the female section. Various kinds of vegetables were grown in these gardens and the total production came to 20,035½ lbs. These vegetables were used in the Poor House, the Work House and the Orphanage and in the other Corporation institutions as shown below.

	Quantity	Cost
		Rs. A. P.
Poor House ...	4977 lbs.	576 11 10
Work House ...	11235 „	1,307 7 7
Orphanage ...	1242 „	143 2 3
Midday Meals Centre, North Range	800 „	60 0 0
do South Range	956 „ 4 oz.	71 11 6
do Central „	825 „	61 14 0
	20,035 lbs. 4 oz.	2,230 15 2

Seeds worth Rs. 35-14-0 were purchased and vegetables worth Rs. 2210-15-2 were produced and consumed.

Statement showing the cost of raw materials consumed, the value of articles produced and proceeds from finished articles sold, is given below :

Cost of raw material consumed	Rs. 20,975-8-0
Proceeds from finished articles sold :	
Cash sales	Rs. 736-12-2
Credit sales	Rs. 20,070-2-9
Total	Rs. 39,800-14-9

Cash collections amounting Rs. 736-12-2 were realised by the sale of finished articles to the visitors who came to the institution during the year

Free supply of beedies and snuff for the use of inmates was continued this year also by the various beedi and snuff manufacturers. Those who are addicted to chewing are being supplied with half anna worth betelnut every day.

On the following occasions, special dishes were served to the inmates :

1. Sri Rama Navami
2. Tamil New Year's Day
3. Vinayaka Chathurthi
4. Krishna Jayanthi
5. Mahalaya Amavasai
6. Ayudha Pooja
7. Corporation Inauguration day
8. Birth day of the Rajapramuka of the United States of Travancore, Cochin
9. Karthikai Deepam
10. Vaikunta Ekadasi
11. New Year's Day
12. Bhogi
13. Republic Day
14. Telugu New Year's Day
15. On the 12th day of the death of the father of Dr. U. Krishna Rao, Minister for Industries & Labour

Staff :

1. Superintendent	...	1
2. Clerk	...	1
3. Chief Warders	...	2
4. Instructors	...	3
5. Warders	...	12
6. Women	...	5
7. Thottis (Male)	...	1
8. „ (Female)	...	1
9. Barber	...	1
		—
		27
		—

Periodical inspections were made by the Assistant Health Officer (I) Health Officer and the Commissioner, Corporation of Madras. The Collector of Madras, Inspector-General of Prisons, Commissioner of Police, Deputy Commissioner of Police who are the official visitors and the non-official visitors appointed by the Council of the Corporation paid visits and recorded their suggestions in the Visitor's Book.

The following distinguished persons paid visits during the year.

Director of Community Projects.

Delegates to the International Conference of Social Work.

Deputy Secretary to the Government of West Bengal.

Municipal Councillor of the Corporation of the City of Rangoon.

Municipal Engineer, Indor.

Mrs. Ella Adde of Sweden.

The expenditure incurred by the Corporation during the year under report on the maintenance of this institution was Rs. 85,579-2-5."

Poor House.

...

The Poor House is a voluntary home where the disabled and old destitutes of either sex are admitted. The Home is in charge of the Superintendent of the Corporation Work House who is a medical man.

Minor ailments of the inmates are attended to by the Superintendent himself and wherever necessary, inmates are referred to the Government Hospitals for specialised treatment.

The details of the inmates are as follows:

		Males	Females	Total
No. of inmates on 1-1-1952	...	99	46	145
Admissions during 1952	...	100	43	143
Discharged	...	84	21	113
Deaths	...	16	11	27
Absconded	...	1	...	1
No. of inmates on 31-12-1952	...	98	49	147

They were given free food and clothing. On almost all Hindu festival days, special dishes were provided out of interest on endowments.

Periodicals were provided for the inmates from the nearest Corporation Free Reading Room. A radio provided the necessary entertainment.

Orphanage

The Orphanage is located in the compound of the Work House and is open to 50 bonafide orphan boys between 5 and 12 years of age. Boys are retained in the Orphanage only up to their 14th year.

A recognised Elementary School is being run for the benefit of the inmates.

Ordinary ailments of the inmates are attended to by the Superintendent who is in charge and wherever necessary, reference is made to the appropriate Government Hospitals for specialised treatment.

The details of the strength of the Orphanage:

No. of children on 1-1-1952	...	50
No. admitted during 1952	...	11
No. discharged	...	10
No. absconded	...	2
No. at the end of 1952	...	49

Homes for the homeless

The six homes for the homeless located in different parts of the City afforded shelter to over 235 homeless families during the year.

Conservancy

Conservancy of the City was looked after by 5 Assistant Health Officers, each in charge of a range of 10 divisions. They were assisted by a Conservancy Supervisor in each range and a Conservancy Inspector in each division with a labour complement of 4039.

525 carts as detailed below were used for the removal of rubbish, sewage, silt etc., during the year.

Trollies	...	11
Double-draught rubbish carts	...	142
Single "	...	280
Single barrel carts	...	82
Night-soil carts	...	10
		—
Total	...	525
		—

Besides these, 77 motor lorries were utilised for this purpose, allocated for work as follows :—

Conservancy	...	57
Night-soil lorries	...	8
Sewage	...	12

Disposal of rubbish and filth ; About 15,00,000 tons of rubbish were removed during the year. A part of the rubbish was utilised for reclaiming low lands in the city and a part for manufacture of compost. Night-soil collected from non-sewered areas was utilised for making compost.

The amount realised by way of sale of cow dung from various cattle depots and by way of sale of rubbish to private parties for reclamation of their lands were about Rs. 7,000 and Rs. 16,000 respectively.

The tipping platforms at Basin Road, Krishnampet and Fudupet helped in speeding up the transport of rubbish. Rubbish carts removed the rubbish to the nearest tipping platform from where motor lorries transported it to the places of its ultimate disposal.

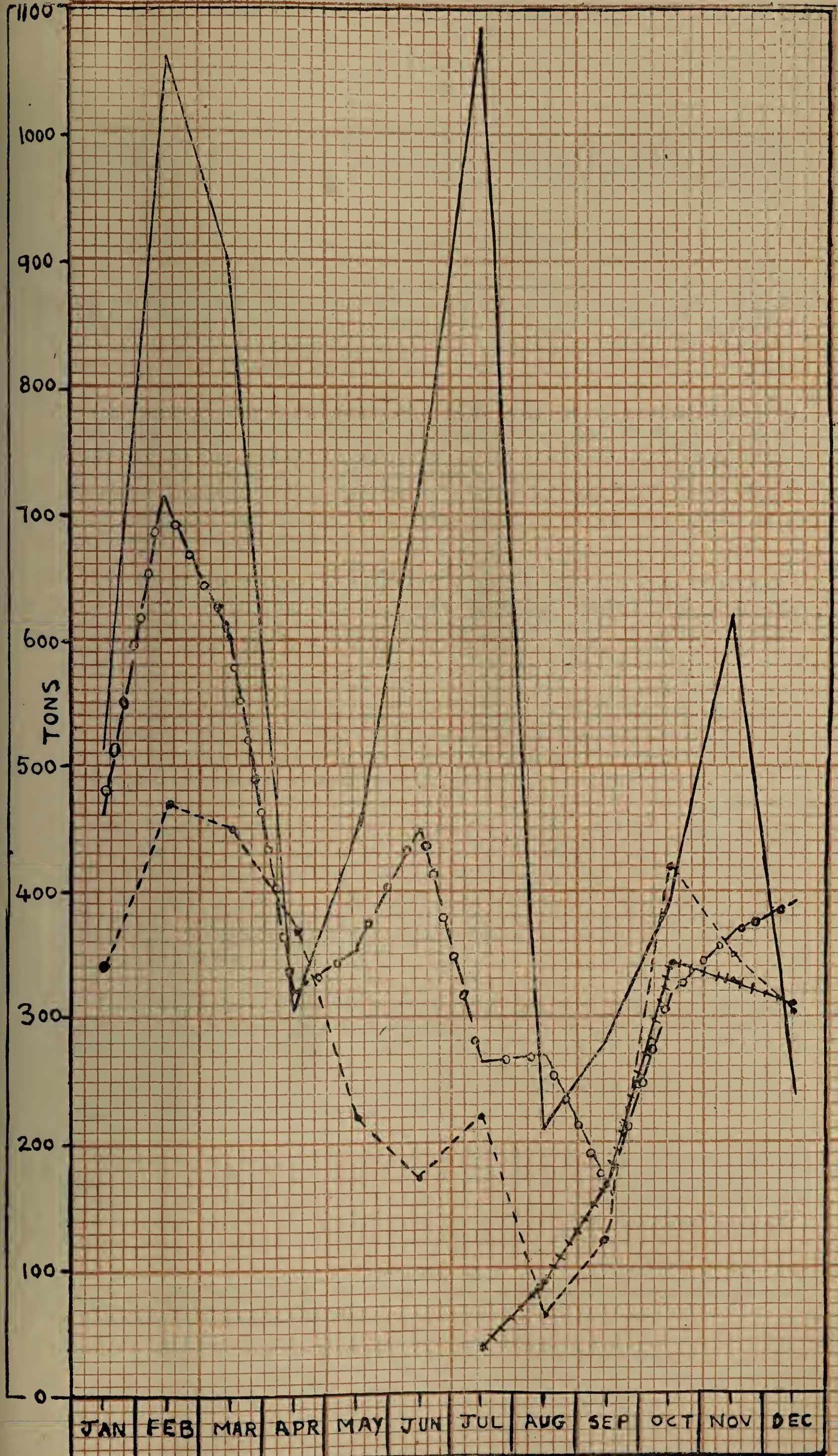
Compost manure: Compost manure was manufactured in Otteri and Korukkupet. 30 Thozhilalis and 1 Maistry were engaged for the work. The total quantity of compost manufactured during the year was 7811 tons. All the available quantity of night-soil from all parts of the city was collected and brought to the compost yards by 8 night-soil lorries. Besides this, the bowel contents from slaughter houses were also utilised for the purpose. 6839 tons of compost manure were sold during the year as compared with 4802 tons in 1951.

With a view to provide a further incentive to ryots, cheap motor transport at As. 8 per mile was provided for transporting compost purchased by them to their sites situate within 10 miles from the city.

Guinea grass and buffalo grass were also grown at Korukkupet till October 1952 and 51,274 lbs. were supplied to the various cattle depots. As it was feared that the soil in Korukkupet Dumping Ground might be anthrax infected, it was discontinued from October 1952.

MADRAS CITY — COMPOST MANURE SALES

1949 +—+—+ 1950 — — — — 1951 —0—0—0 1952 — — — —



The compost yard was inspected by the Sewage and Compost Development Officer, Government of India, during October 1952 and by the State Compost Development Officer during December 1952 and their suggestions were carried out.

Public latrines : There were 406 public convenience in the city.

The day-to-day cleansing and disinfecting of public latrines were looked after by this Department while their repairs were attended to by the Special Engineer. In order to keep the public conveniences in a sanitary condition, the work of white and colour washing was attended to by the Conservancy Inspectors of the divisions once in 3 months at a total cost of about Rs. 3,000.

Labour : In pursuance of G.O. No. 4942 L. & M., dated 29-12-1931, 48 thozhilalis retired from service on account of old age and infirmity were granted bonus and gratuity to the tune of Rs. 6,817-1-0. The Bonus Fund accumulations paid to the thozhilalis and their nominees totalled Rs. 9,312-2-9. About 500 thozhilalis were in occupation of tenements provided by the Corporation while 200 thozhilalies were given facilities to construct their own dwellings on Corporation lands.

Animals : 748 bullocks were in service on 1-1-1952 in all the 9 conservancy cattle depots. 133 bullocks were purchased during the year, 92 animals died and 47 old unserviceable bullocks were sold in public auction. Thus there were 742 animals in all the conservancy cattle depots on 31-12-1952.

The cattle depots were in charge of Veterinary Surgeons assisted by the Conservancy Inspectors. The Veterinary Assistant Surgeons looked after the health and feeding of animals, while the Conservancy Inspectors were in charge of labourers and maintenance of accounts.

The Veterinary Assistant of 'C' Cattle Depot was also in charge of 'D' Cattle Depot at Perambur and the Veterinary Assistant Surgeon of Saidapet was in charge of 'H' Cattle Depot at Kodambakkam. The Veterinary Assistants in charge of Basin Bridge, Barber's Bridge and Pudupet Cattle Depots were also in charge of the Veterinary Dispensaries in respective depots. The scale of diet for conservancy bullocks continued to be the same as in the previous two years.

Out of 92 animals that died during the year, 84 died of old age and debility, 1 of Tuberculosis, 2 of Anthrax and 5 of other non-contagious diseases.

890 cases were treated in the conservancy cattle depots and veterinary hospital at Hope Lodge during the year.

There was no outbreak of contagious diseases in any of the conservancy cattle depots during the year under review excepting 2 cases of Anthrax, one at Basin Bridge Depot and other at Choolai Depot. All preventive measures were taken at once in all the conservancy cattle depots and there were no further cases anywhere in any of the cattle depots.

A new building for office and store rooms was constructed in Krishnam-pet Cattle Depot during the year.

Veterinary Dispensaries: 3 veterinary dispensaries continued to do good work and were popular with the public. The total number of cases treated in the dispensaries were as follows:—

	No. of cases treated.
'B' Basin Bridge	11,771
'D' Pudupet	14,703
'F' Barber's Bridge	17,179
	<hr/>
	43,653
	<hr/>

The common diseases treated were Mastitis, Sterility and deficiency diseases in calves a part from the common systemic diseases. This year also, there was a large number of cases of Cow-pox in the private cattle yards in the city and cases that were brought to the dispensaries were treated successfully. Owners of cattle yards were advised to keep their places in sanitary condition.

Breeding bulls: The bulls which were loaned by Government to the Corporation were all withdrawn by April of this year from all the depots. But artificial insemination has become popular and over 75 per cent of the calves born were healthy.

Anti-Malarial Operations

The operations were directed against mosquitoes in general and particularly against the malaria-carrying species. The entire operations were in the charge of a Medical Officer with Public Health qualifications in the grade of second-class Health Officer and with special training in anti-malarial operation assisted by 5 Malaria Supervisors, one for each range, 8 *Stegomyia* Overseers, 50 Malaria Maistries and 313 Thozhilalis. The labour complement, grouped into gangs, was distributed to work in the divisions at the rate of about 6 per division. The work comprised of cleaning drains, ponds and tanks, introduction of larvicidal fish into wells, ponds and tanks and house-inspection for eliminating breeding in particular areas.

The species of mosquitoes found in the city fall under three categories viz., Malaria-carrying mosquitoes, *Stephansi* and *A-culicifacis* (2) *A Subpicutus* with nuisance value (3) *Culincines*, a nuisance to human comforts and Filarial-carrying.

The Malaria-carrying species *A. Stephansi* was found to breed invariably in wells mostly in the heart of the city. This species is found in the crevices of the walls in low temperature and high humidity. Attempts were made to spray completely the internal surface of the wells, besides providing trap doors over the top of the wells. Under the provisions of section 202 (5) of the Madras City Municipal Act, about 22,000 wells spread all over the city were subjected to monthly inspection by gangs to eliminate breedings, to remove all floating matter and to destroy breedings in the larval stages wherever found with 0.3% D.D.T. solution. Larvicidal fish were introduced into such wells later.

On rare occasions, Malaria-carriers (*A. Stephansi*) could be detected even in over-head tanks of buildings.

A. Culicifcis were prevalent mostly in the outskirts of the city. They breed in clean ponds with shady vegetations at the edges and also in cultivated fields especially during rains. Breedings in larval stages are arrested from further growth by suspension of D.D.T. and Gemaxine.

2. A *Subpicutus* though not a carrier of Malaria in the City has its own nuisance value but not to the same extent as that of *Culicines*. A *Subpicutus* generally breeds in almost all stagnant pools after rains and at the edges of the three water ways in the city namely the Adyar River, the Cooum River and the Buckingham Canal. They thrive under moss and netted weeds where larvicidal fish cannot feed on them. Gangs are, therefore, concentrated to deweed the water ways and to remove the floating moss so that they may be destroyed biologically by facilitating free movements for fish to feed on them.

Culicines Culex was the variety found in the city. They breed in stagnant cesspools and stagnant drains, in sullage especially in the outskirts of the city without underground drainage. The breedings are arrested in the larval stages by patrolising the drains and by introducing the saw-dust balls previously saturated with diesel oil mixture fortified with 2% D.D.T. prepared with a view to liberate oil gradually to form a thin film over the surface of the cesspools as and when the contents were removed and also to serve as a repellant to the female mosquitoes to lay eggs.

59 lorry loads of silt were removed from cess-pits in the extended areas. Another breeding place of *Culex* is the area of water ways just at the points where the water ways were contaminated with inflow of sullage either from sewers or from the pumping stations. In such places, the treatment adopted was the spraying of 5% D.D.T. solution after removing the floating algae

In the city, they breed in almost all the storm water drains and in the pumping station wells. The drains in the city are cleaned, brushed and oiled twice in a week.

The area half a mile round the Port received particular attention with regard to prevention of *Ades stegomyia* following a Government Order against the dissemination of yellow fever. The area under reference is divided into 8 sectors and each is in the charge of a *Stegomyia* Overseer with full equipments to inspect every premises in his area and to eliminate not only *stegomyia* breedings in particular but also other species in general. The *stegomyia* index has been brought down gradually to as low as 0.01 to 0.2 percent in the year under report as against 5.9 percent when the survey was first made in the year 1936.

In addition to the larvicidal measures insecticidal measures against by adult mosquitoes irrespective of species or genus were also instituted spray of D. D. T. solution of 5 percent against *Anopheline* variety and in 10% strength against *Culicines* on the wall surfaces whenever the public require such facilities at Rs. 5 per 1,000 sq. ft. of spray surface, the total income under this head being Rs. 1,423-5-0.

Nuisance from other insects like cockroaches, bugs, flees, flies complained of by the citizen were also attended to with D. D. T. insecticides.

13,016 gallons of liquid fuel, 2,356 gallons of kerosene oil, 285½ gallons of Aromex, 1,511 lbs of D. D. T, 326 lbs. of D. D. T. Geigy, 97 pounds of soft soap were all used both for antimosquito and insecticidal work.

REPORT OF THE WATER ANALYST

1952

1. Introduction

The salient features of the year were: (1) a heavy downpour of 18.75 inches of rain-fall at Red Hills in May 1952 which was mainly responsible for increasing by about 10 feet the lowest water level reached at Red Hills Reservoir ; (ii) production of a strong smell of H_2S in the filtered water chambers of the sand filters at the Kilpauk Water Works ; (iii) fall in the bacterial purity of the Test Tap samples as a result of (ii); (iv) waters from certain wells such as those on the Marina and at Adyer were pumped into the distribution system for augmenting the supply : and (v) sterilisation of water mains with heavy doses of chlorine. The quality of water supplied to the city continued to remain unchanged.

2. Scientific

The nature and amount of work turned out during the year are shown; in Table I.

Raw water for the city was drawn from three surfaces during the year. (a) Kortalayar River system (b) Infiltration gallery wells at Saidapet and Sembiam and (c) shallow wells located in various parts of the city. Each of these is discussed briefly below :

A. Kortalayar River System: This system comprising the Kortalayar River which is dammed at two places-poondi and Tamarapakkam, Sholavaram Reservoir and Red Hills Reservoir are the main source of water supply to the city.

(a) *Limnological conditions in Satyamoorthi Sagar at Poondi :* The total rain-fall for the year at Poondi was 45.46". In May alone, 6.51" were recorded. There was practically no water in April. Highest level was reached in December (Table II).

The results of analysis of samples collected from this source are shown in Table III. The "total solids" varied from a minimum of 24.0 parts in September to a maximum of 78.0 parts in July ; P.H from 7.6 in May and December to 8.6 in July and November ; dissolved oxygen from 4.4 c.c. litre in March to 11.84 c.c. litre in August ; chlorides from 1.4 parts in May to 20.0 parts in August and organic matter as represented by "oxygen absorbed" (Tidy's Test) from 0.194 parts in September to 0.282 parts in January.

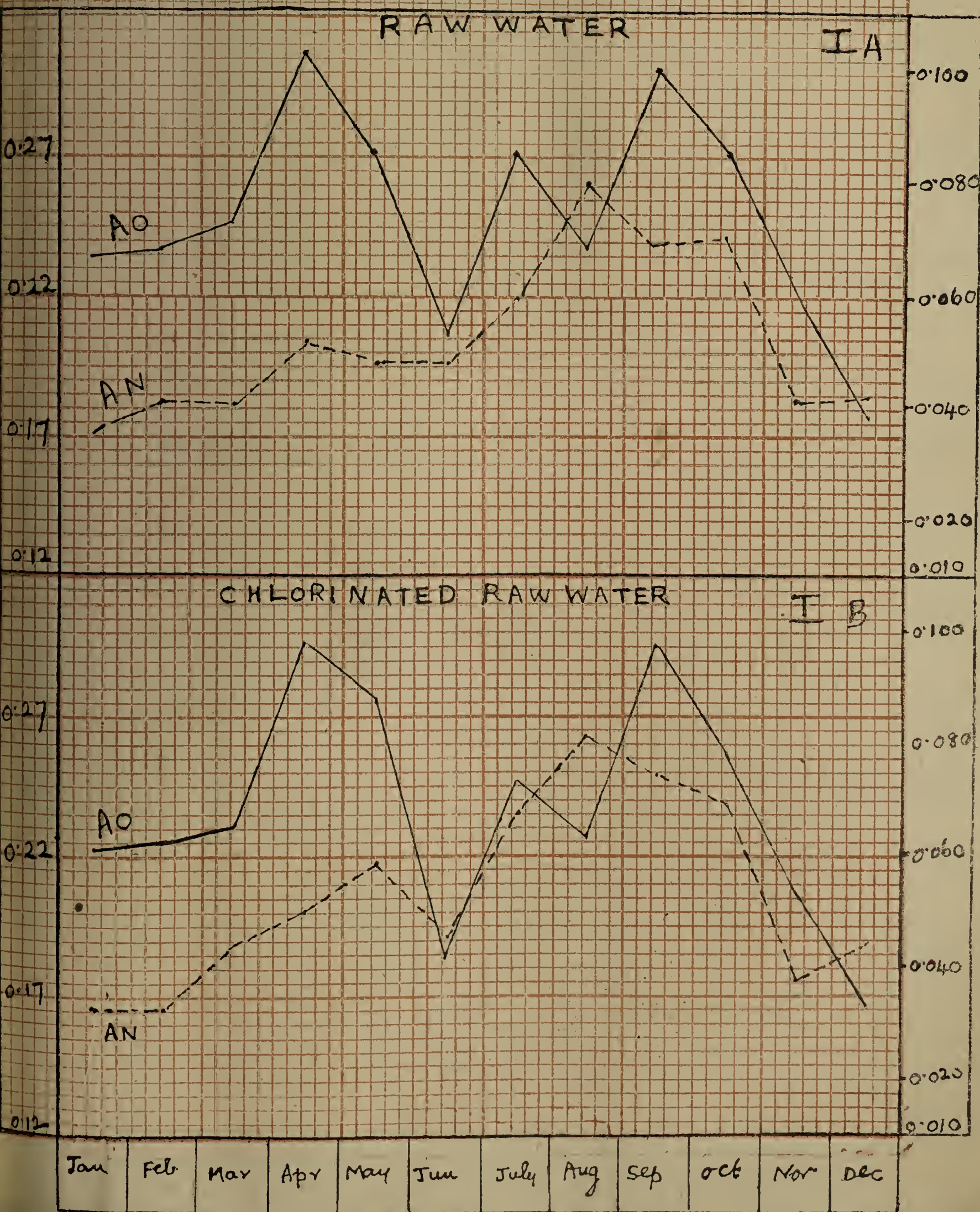
Bacteriologically, coliform flora varied from 2 c. c. to 5 c. c. and upwards.

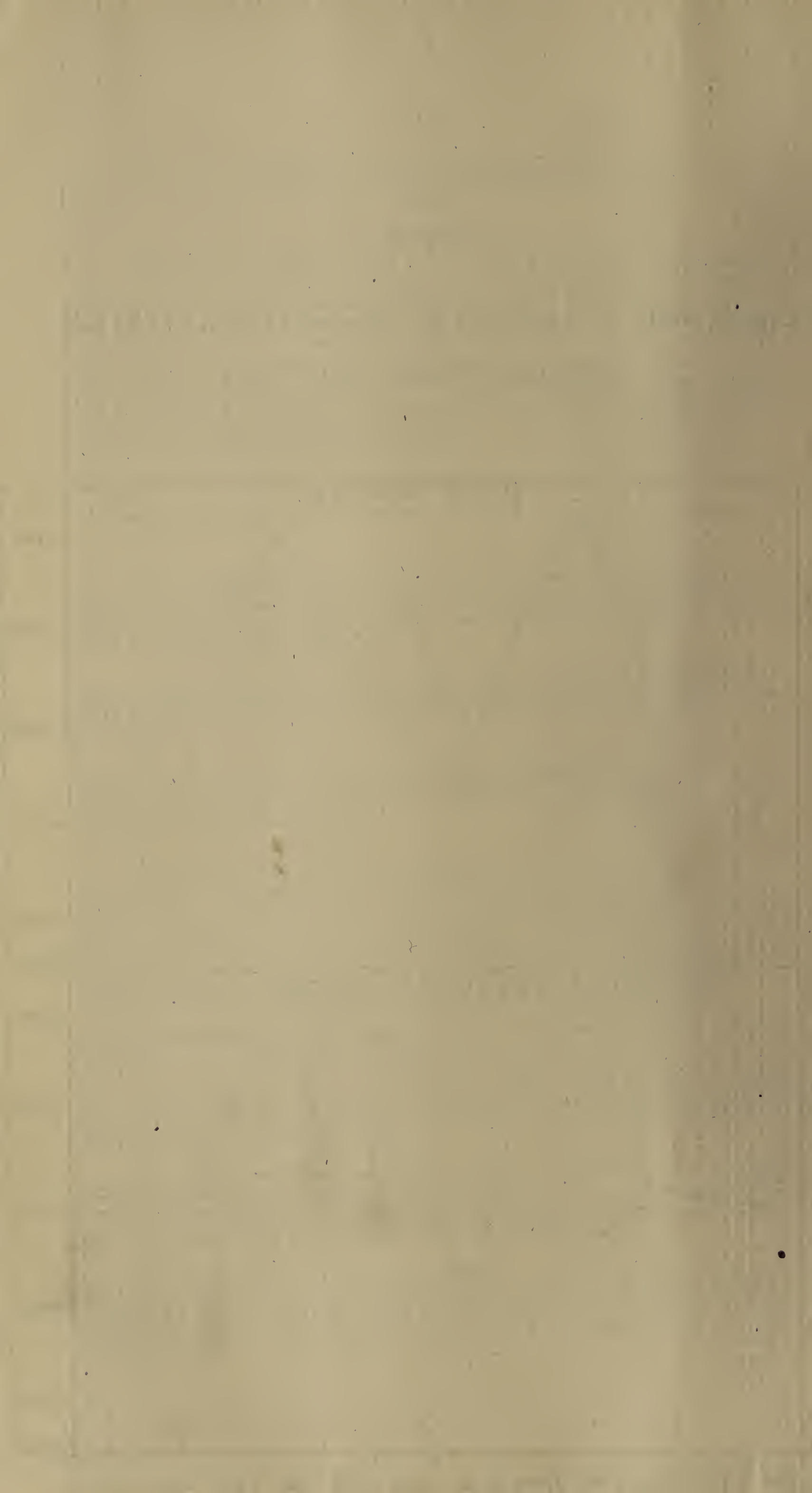
(b) *Kortalayar River at Tamarapakkam anicut :* The conditions of the River at the above place are shown in Table IV. Samples were drawn from March to August and in December.

(c) *Sholavaram Reservoir :* The limnological conditions of the reservoir are shown in Table V. The total annual rain-fall in the catchment area of this reservoir was 44.78." In May alone, 15.08." were recorded. The level was highest in May (51.66 feet) and lowest in April (42.58 feet).

The total solids varied from a minimum of 19.6 parts in May to a maximum of 34.0 parts in June ; pH from 7.6 in March and June to 8.8 in February ; dissolved oxygen from 0.9 c.c./litre in April to 6.1 c.c./litre in November ; and oxidisable organic matter from 0.176 parts in May to 0.420 in September.

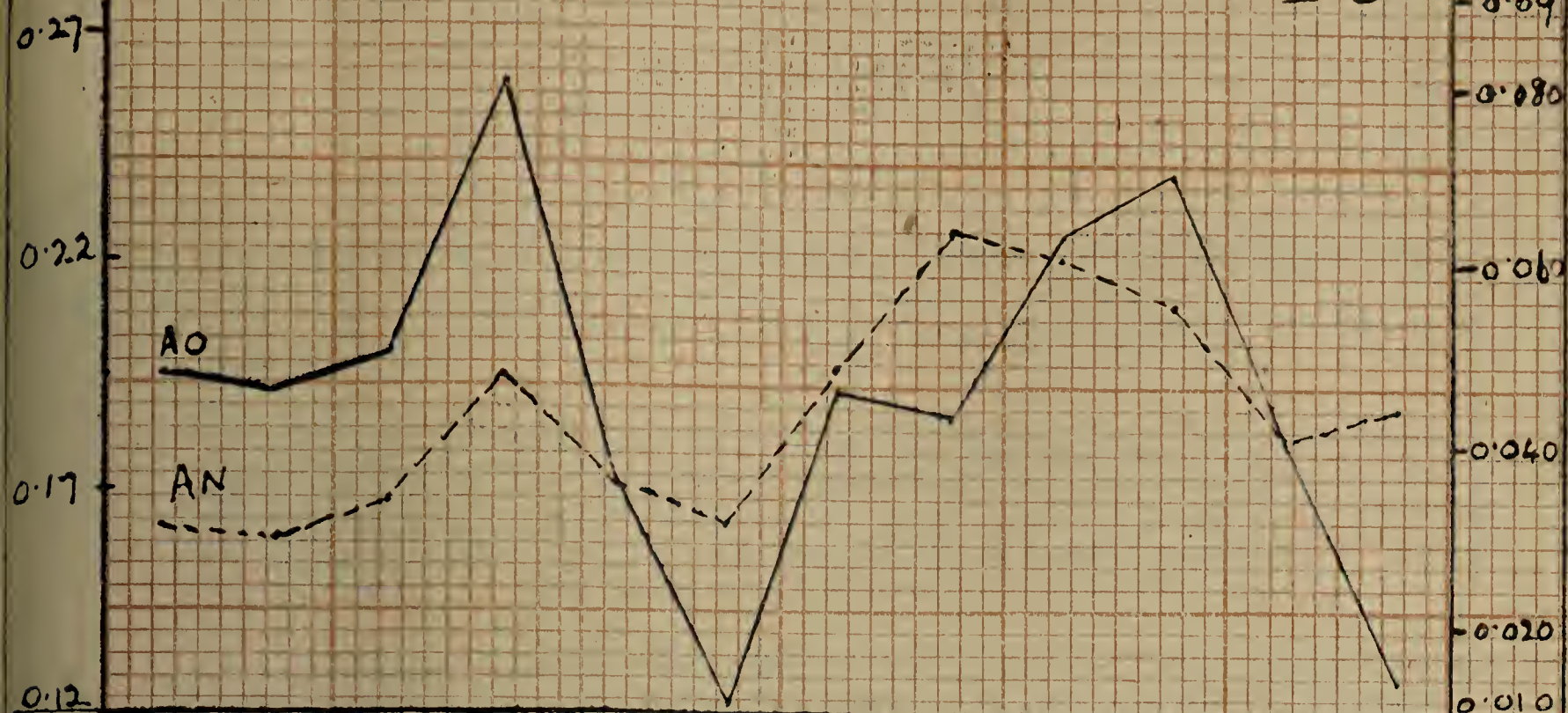
Organic Matter as Represented by Absorbed Oxygen (A.O) and Albuminoid Nitrogen (A.N.) 1952





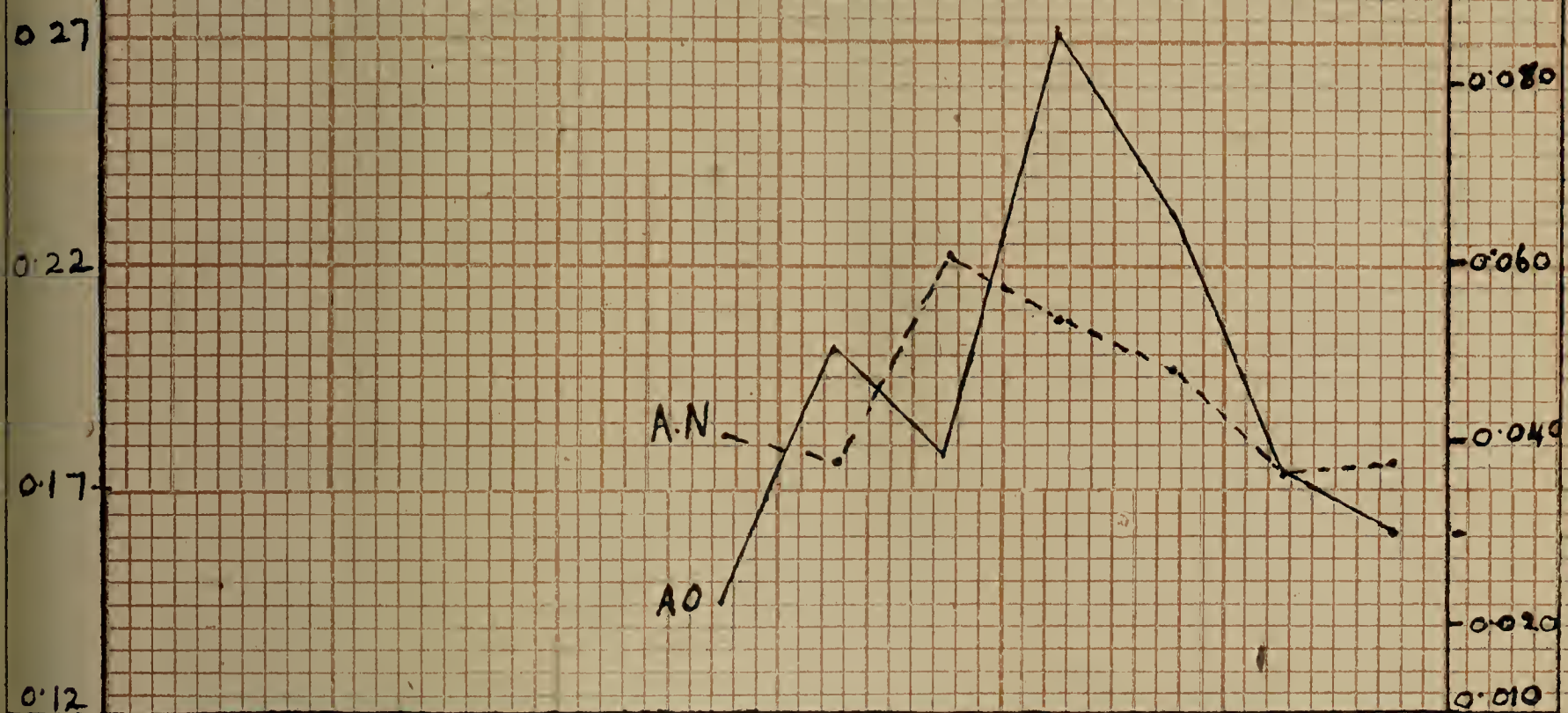
TEST TAP

I C



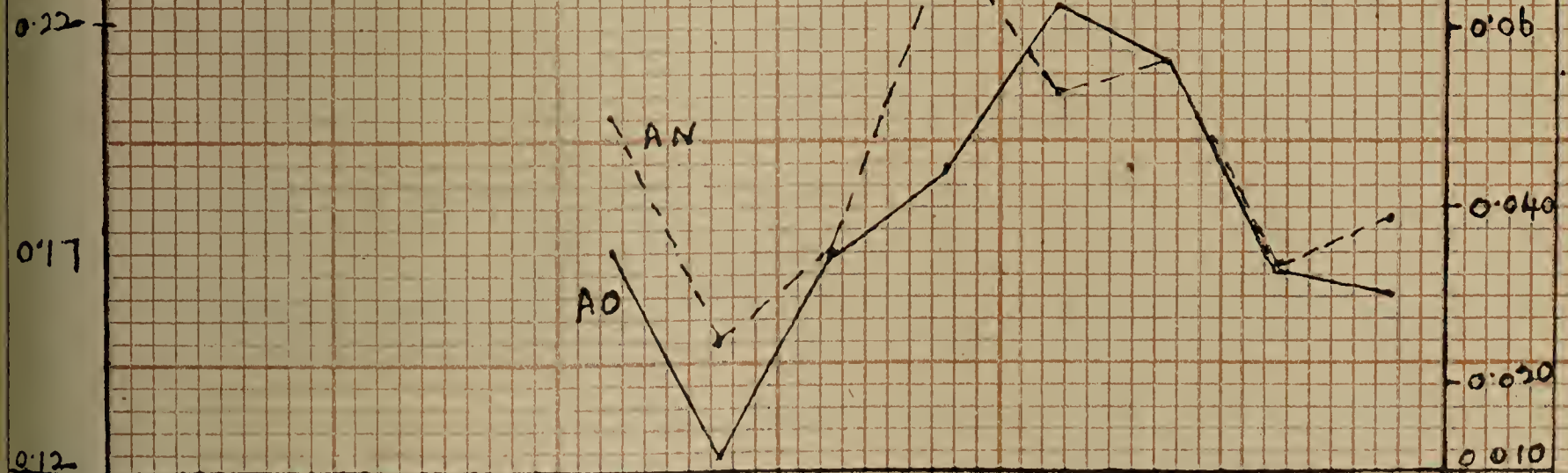
HIGH PRESSURE AREAS

I D



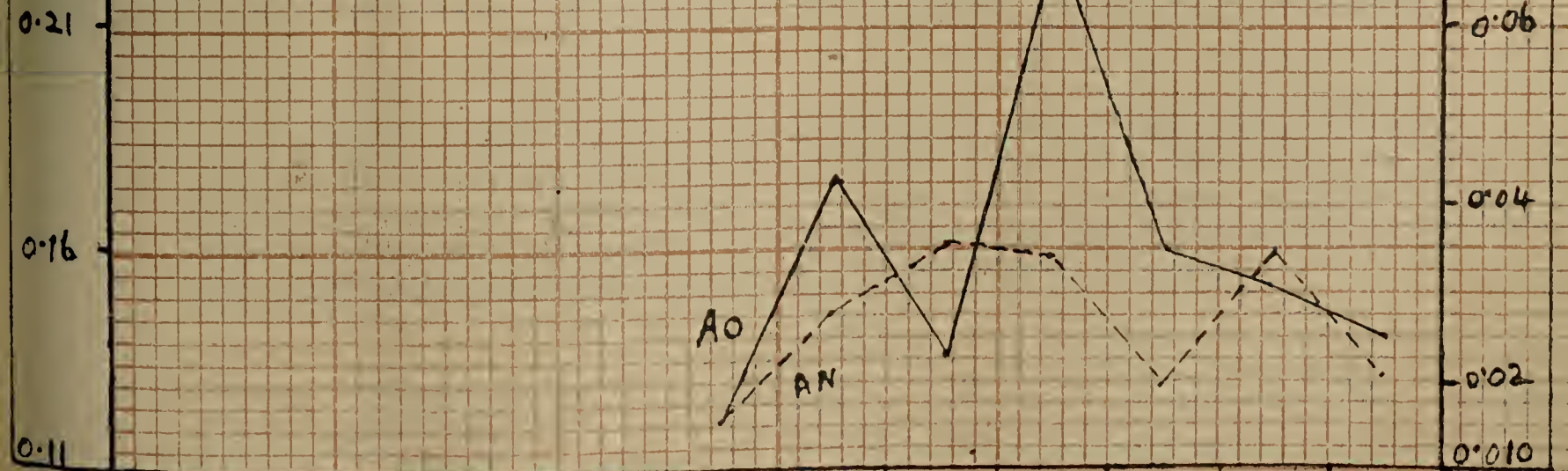
LOW PRESSURE AREAS

I E



BOOSTER AREAS

I F



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Bacteriologically coliform flora were present from 1 c.c. and upwards.

(d) *Red Hills Reservoir* : The limnological conditions are shown in Table VI.

In the catchment area of the Red Hills Reservoir, the total annual precipitation was 48.25", the highest monthly record of 18.73" being in May. The level of water was lowest in April being 28.30 feet and highest in December. Full tank level was not reached during the year. January to April represented the drought period when the lowest level was reached.

Total solids varied from a minimum of 20.0 parts in May to a maximum of 38.4 parts per 100,000 in April, pH from 7.4 in May to 9.4 in February; dissolved oxygen from 1.68 c.c./litre in March to 6.0 c.c./litre in November; oxygen absorbed from 0.204 parts in July to 0.303 parts in April and chlorides from 1.6 parts in May and June to 7.0 parts in April.

Bacteriologically coliform flora were present from 1.0 c.c. and upwards to 6.0 c.c. and upwards.

(e) A comparison of the three reservoirs is made in respect of certain important physico-chemical variables indicating organic production.

Chemical variables	Satyamoorti Sagar		Sholavaram Reservoir		Red Hills Reservoir	
	Drought January to April	After May to December	Drought January to April	After May to December	Drought January to April	After May to December
1 Total solids (parts per 100,000)	40.0 to 44.0	12.4 to 78.0	24.0 to 35.2	19.6 to 31.6	21.8 to 38.4	20.0 to 33.2
2 P.H. ...	8.1	7.6 to 8.6	7.6 to 8.8	7.6 to 8.6	8.1 to 9.4	7.4 to 8.6
3 Dissolved oxygen (c.c./l)	4.4 to 7.7	4.27 to 11.9	0.9 to 2.0	4.6 to 6.16	1.68 to 4.52	4.27 to 6.0
4 Organic matter :						
(a) Oxygen absorbed	0.24 to 0.282	0.194 to 0.288	0.147 to 0.546	0.176 to 0.420	0.230 to 0.303	0.204 to 0.259
(b) Albuminoid nitrogen	0.036 to 0.044	0.020 to 0.096	0.016 to 0.048	0.020 to 0.064	0.020 to 0.048	0.032 to 0.072

It will be seen from the above that (1) in all the reservoirs, solids and organic matter are greater during the drought period than during the rest of the period; (2) total solids, dissolved oxygen and albuminoid nitrogen are greatest in Satyamoorti Sagar; (3) pH is highest in Red Hills Reservoir; (4) the oxygen absorbed figures are greatest in Sholavaram reservoir.

Last year also, the oxygen absorbed figures were highest in Sholavaram reservoir indicating that it was affording facilities for greatest organic production.

(f) *Raw water at the Kilpauk end*: Samples of raw water were drawn every day from the raw water conduit and the weekly average analytical results are shown in Table VII. The colour of raw water was yellowish and opaque from January to May, and again from August to December. But during June and July, it was greenish and opaque.

Ammonical nitrogen varied from Nil to 0.029 parts per 100,000 albuminoid nitrogen from 0.020 in the first week of January to 0.102 in the second week of September, and pH from 7.2 in the last week of May to 9.6 in the third week of January. Nitrates were not present in 50 c.c. samples and nitrates in 10 c.c. of water samples. Iron content varied from 0.004 parts to 0.158 parts per 100,000. The seasonal changes in the organic content of raw water is shown in graph I.

The two dominant centrifuged phyto-plankton organisms in the raw water were: (a) *Cylindrospermum Planktonicum Varnovo* and (b) *Microcystis Spp.* The former varied from 11,900 organisms per Nil in the 3rd week of November to 31,000 in the third week of July, and the latter from 100 per Nil in the last week of August to 1120 per Nil in the third week of October.

Table No. VIII is consolidated statement showing total monthly rainfall, average monthly lake level, temperature, exdisable organic matter and albuminoid nitrogen for the last 31 years—1922 to 1952). The data for 1942 to 1952 are shown graphically in Graph II.

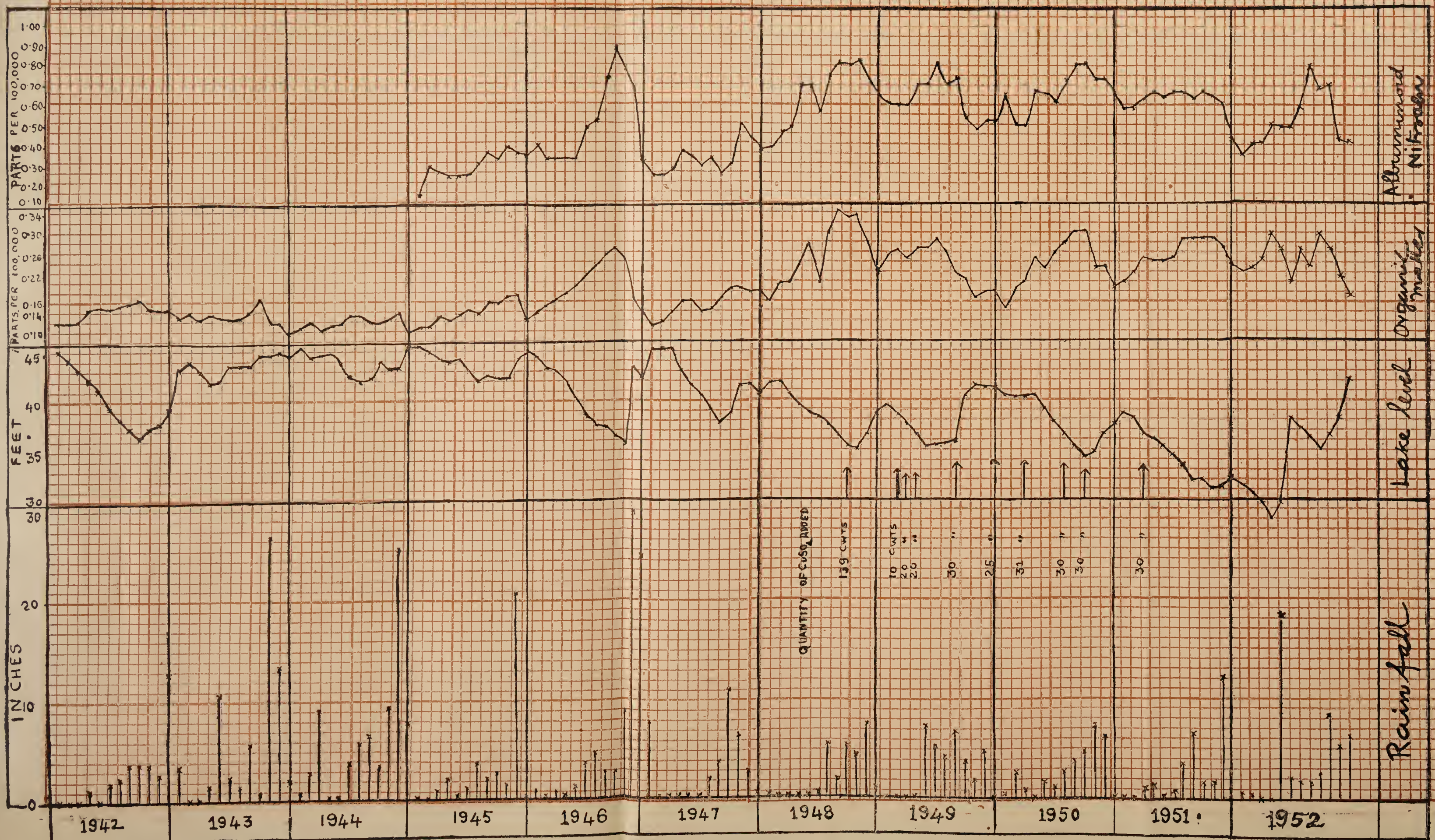
(g) *Chlorinated Raw Water*: The raw water reaching the Kilpauk end was chlorinated with gaseous chlorine just a few minutes before reaching the sand filters. The seasonal changes in the content of organic matter are shown in graph I B. The dosage of chlorine which was applied is shown in Table No. IX. The average dose varied from 1.17 p.p.m. in June to 2.35 p.p.m. in September. Bacteriological results of the chlorinated raw water were often unsatisfactory—graph III A—and Table X. The percentage of samples showing absence of coliform flora in 60 c.c. (i.e. first-class samples) varied from 0 to 40 except in January when it was cent percent—graph II. On 3-7-1952, the fishes *Barbus Ticto*, *Ambassis Mama*, *Viviparadissimilis* in Bed 16, and *Sprateloides Malabaricus*, *Chelaphulo*, *Trichogaster Fasciatus* and *Ambalypharyn-Oodown mola* in Bed 4 were netted.

(h) *Sand filters and filtration*: There are 17 sand filters of which 6 to 11 beds were in commission daily with no fixed rate of filtration. The quantity of water filtered varied from a minimum of 9.00 m.g.d. in May to a maximum of 22.66 m.g.d. in December. The average dose of chlorine applied to filtered water varied from a minimum of 1.04 p.p.m. in November to a maximum of 4.28 p.p.m. (graph III B) in September (Table IX). The application of such a high dose was due to the presence of sulphuretted hydrogen in the filtered water. The presence of this gas in varying amounts as shown by the colouring of the lead acetate test paper hung in the filtered water chambers of beds is shown in Table XI.

The bacteriological results are adversely affected by the presence of this malodorous gas is shown in Table XII and Graph II.

Besides sulphuretted hydrogen, the filtered water contained iron in appreciably large amounts. On 8th August, sulphuretted hydrogen and

Madras City - Graph II Relation between Rainfall, Lake Level, Oxidisable Organic matter (Tidy's)
and Albuminoid Nitrogen for 1942 - 1952



iron were estimated in the filtrates from beds which were working on that day. The results of analysis are given below:

Serial No.	Bed No.	The day working of the filter bed.	H ₂ S in mg/litre	From parts per 100,000	Remarks
1	1	17th day	0.37	0.010	
2	3	7th day	Nil	0.015	
3	5	15th „	0.44	0.025	
4	6	12th „	0.14	0.020	
5	7	26th „	0.61	0.008	
6	11	22nd „	0.65	0.010	
7	12	3rd „	Nil	0.004	
8	13	5th „	Nil	0.010	
9	14	23rd „	Nil	0.008	
10	15	20th „	0.51	0.915	
11	16	10th „	Nil	0.006	

In the table below, the quantity of iron which was estimated in raw water, mixed filtrates and the test tap at K. P. S. on a few dates in July and August are shown:

(Results expressed in parts per 100,000)

Date	Raw water	Mixture of filtrates	Test Tap	Remarks
10— 7—1952	0.015	0.015	0.008	
17— 7—1952	0.025	0.015	0.030	
23— 7—1952	0.025	0.025	0.027	
30— 7—1952	0.010	0.012	0.015	
6— 8—1952	0.006	0.010	0.020	
7— 8—1952	0.006	0.010	0.020	
13— 8—1952	0.010	0.010	0.020	

(i) *Test Tap at K.P.S.* Some of the important physical, chemical and bacteriological results of the Test Tap at K.P.S. are shown in Table XIII. It will be seen therefrom that the bacterial quality of the water sent to the city was not always satisfactory (Graph III-C). In some months, such as August and September, the number of first-class samples was as low as 7 to 25 percent. The presence of H₂S in the filtrates from beds was mainly responsible for the poor bacterial quality.

(j) *Distribution system:* Tables XIV, XV, XVI and XVII show the results of analysis of samples drawn from the high pressure, low pressure and Booster areas of the City Distributory system which is fed by filtered water from the Kortalar River System (Fig. I). They all show that the bacteriological results of the distributed water in all these areas are poor (Graph III D, E & F). Chemically, they contain still excessive amounts of organic matter.

B. *Infiltration Gallery wells at Sembiam and Saidapet:* The extended areas of the City—Sembiam, Saidapet and Guindy are supplied with water from the two infiltration galleries at Sembiam and Saidapet and the well at

Richards Park, Saidapet. While the Saidapet gallery water was always good chemically, the Sembiam gallery water contained iron which varied from 0.016 to 0.056 parts per 100,000. It was therefore chlorinated and then treated with lime by Water Works Department and supplied. Table XXI and XXII show respectively the bacteriological and chemical quality of the distributed water from these two galleries (Fig. I).

C. *Emergency water supply*.—Due to the very low level of water in the Red Hills Reservoir, attempts were made to tap sub-soil water in a number of places in the city. Table XXIII shows the results of analysis of samples collected from a well in the Kortalarayar river bed. This water was pumped into the Sholavaram reservoir. It contained an excessive amount of iron 0.080 to 1.0 part per 100,000. Table XXIV contains the results of analysis of samples drawn from shallow wells which were dug out at outlying areas of the city.

From some of these such as those located at Adyar, Marina and a few other places, water was directly pumped into the new distribution pipes after chlorination. In this way, it was possible to tide over the water famine to a considerable extent which was threatening the city for the last six years.

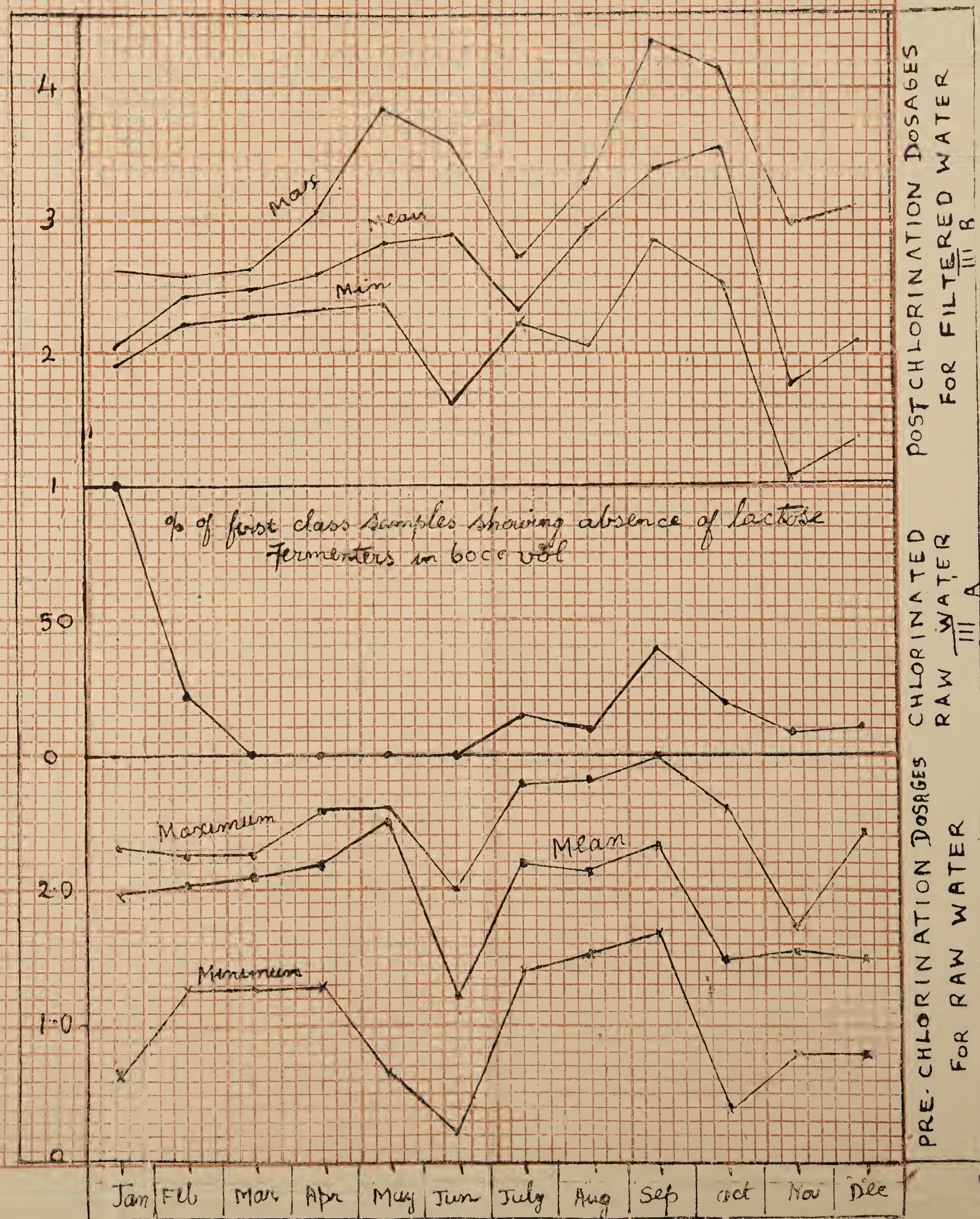
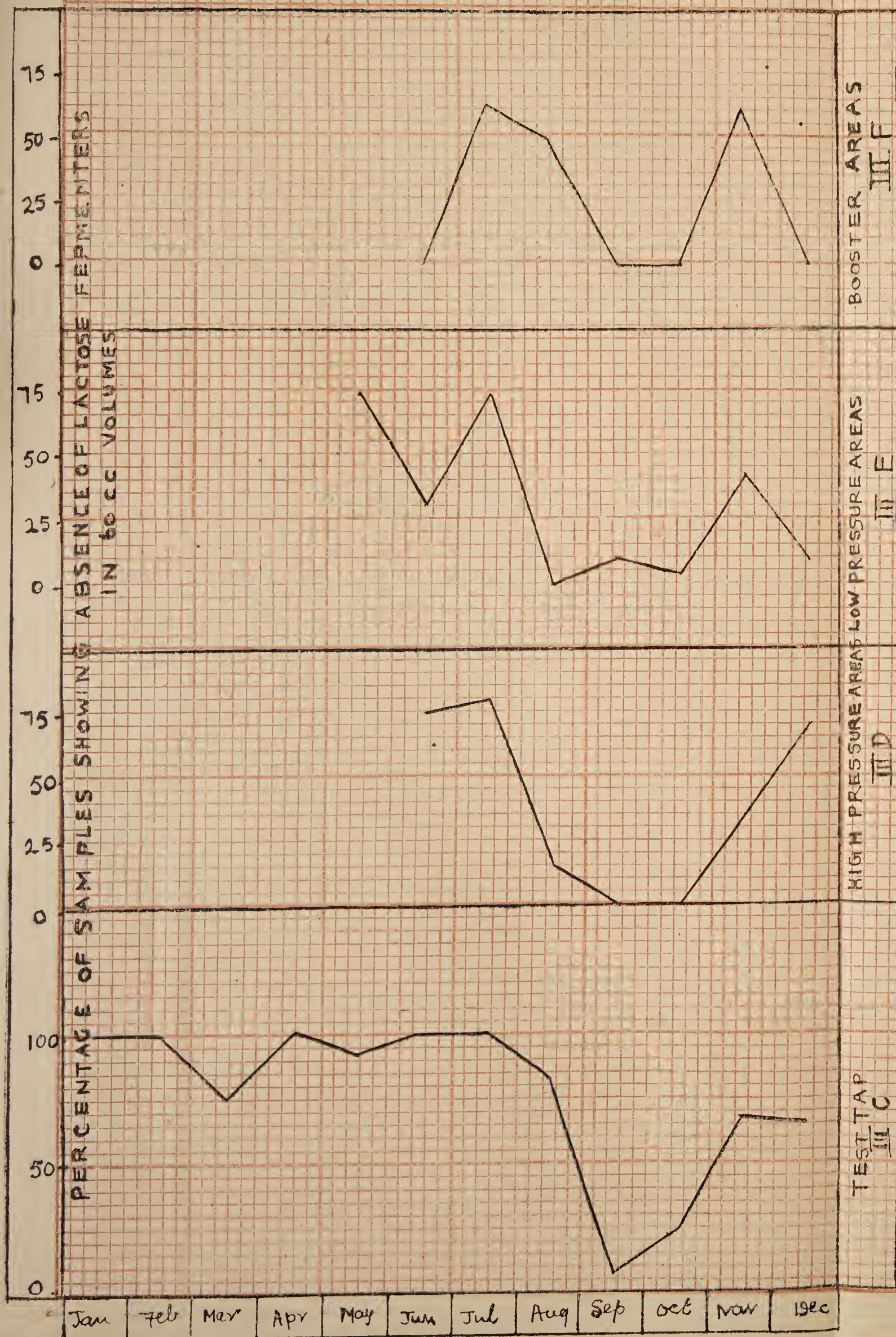
For chlorinating these wells, the following procedure was adopted. A chloro-micro feeder was installed at each of these well sites as shown in Figure II. The carboy was filled with settled bleach liquor which was delivered just below the foot valve of the pump attached to such of these wells. Thus bleach liquor was added whenever water was pumped from the wells. In this way, the bacterial purity was maintained at as high a level as possible.

D. *Sterilisation of water mains for the removal of the growths and deposits in the pipe lines of the city Distributory system*: The special staff appointed for the above purpose last year was continued this year also. The work done in this connection is briefly stated below and in Table XXV.

The work of sterilisation of water mains at nights, which was started on August 1951 as per Special Committee's recommendation (Memorandum No. 78269/48-5-F, P.H., dated 2-12-1948) was continued this year also. All particulars about the sterilisation of water mains for the period beginning from 1-1-1952 to 31-12-1952 are given below :

1	Total No. of days the mains were sterilised	193 days
2	Quantity of chlorine used	5088.5 lbs.
3	Length of mains treated	6 miles and 2½ furlongs
4	Details of the mains treated.	
	(a) Main No. 7—I length	... 2 miles and 5 furlongs
	II size	... 14", 12" and 10"
	III days	... 60 days.
	(b) Main No. 2—I length	... 3 miles and 5 furlongs
	II size	... 18", 14" and 12"
	III days	... 133 days
5	No. of samples examined	
	(a) before sterilisation	... 254
	(b) after sterilisation	... 254
6	Bacteriological results.—	
		Percentage of samples where B. Coli is absent in 60 c.c.
	Before sterilisation	... 46 %
	After sterilisation	... 96 %

Graphs Showing the relation between Chlorine Dosages
& percentage of first class samples



7. Effect of the addition of chlorine on the distribution system.

(a) Brownish, flocculent, soft deposits are dislodged from the portion of the mains when they are scoured early next morning. These deposits consist essentially of ferric oxide (30—48%), organic matter (28 to 50%) and iron bacterium *SIDEROCAPSA* Sp and *LEPTOTHRIX* OCHRACEA. Portions of these deposits are prepared in the laboratory for inspection.

(b) There is an increase in the iron content of the water going through the pipe for some days and thereafter, there is a reduction.

(c) There is an increase in the phosphate content of the water.

(d) Bacteriologically, there is considerable improvement after sterilisation.

From the foregoing, it will be seen that there is no doubt about the beneficial effect of the sterilisation of water mains in improving the general quality of water as supplied to the City. The incrustations in the pipe lines are several decades old and patient but persistent treatment is needed to bring about a thorough change. The staff employed for this purpose will have to be continued for at least another 10 years on a permanent basis as the progress of work has to be necessarily slow and as the incrustations respond to treatment only at the end of a week of continuous heavy chlorin treatment.

E. Research on Red Hills Reservoir Water :

The following is a brief summary of the researches of the Government Committee on Water and Sewage Purification published in G.O. Ms. No. 2725 Health, dated 21-8-1952, made on Red Hills Reservoir Water.

The main conclusions of this report for the half-year ending 30-6-1952 are :

1. Without adequate preparation, the Red Hills lake water is unsuitable for purification through slow sand filters.

2. The formation of H_2S and loss of dissolved O_2 during slow sand filtration were considered to be due to metabolic activity of bacterial organisms.

3. So, it was argued that if suitable measures were taken to destroy the causative organisms responsible for H_2S and loss of O_2 could be prevented.

4. Chlorination was used as the bactericide of choice to kill these organisms by (a) break point method of chlorination and (b) chloramination.

5 Results of 4 (a).

- (1) the quantity of water filtered per unit area is increased
- (2) filtered water is free from *B. Coli*
- (3) free from H_2S
- (4) Higher percentage of removal of organic matter
- (5) O_2 depletion.

6 Results of 4 (b) :

(a) Appears to offer greater advantages than chlorination alone, for high chlorine residuals could be maintained for long periods using smaller dosage of chlorine than in the break-point method.

(b) Am as Am_2SO_4 at 0.5 p.p.m. was used first and later chlorine at 1.5 p.p.m.

(c) Chloraminated and filter gave 70 days and 57 days while the control and filter worked for 26, 28, 18 & 27 days during November 1951 to April 1952.

(d) Residual Cl_2 content of the filtered water was fairly high (0.4 to 1.0 p.p.m) as combined chlorine.

(e) Whereas break-point method of chlorination yielded a filtrate containing chlorine in small traces.

(f) Age of the filter bed is a factor of importance in determining the chlorine residual.

(g) The chlorammated raw water and filtered water were free from coliform organisms at all times.

(h) No H_2S in the chlorammated slow sand filter at first but it was produced in small amounts in an old bed into which chlorammated raw water was let in for comparison with a freshly washed sand filter.

(i) The initial high content of dissolved oxygen in the filtrate from a freshly washed slow sand filter and its subsequent loss is not readily explainable.

(j) Organic matter content—11 to 30% improvement in C.A.F. filter while it was only 10-12 percent in S.S.F.

(k) Free ammonia was found to be greater.

(l) Turbidity improvement—36.4 to 70.0% S.S.F. filtrate was less turbid.

7. Alum coagulation, settlement; rapid sand filtration followed by slow sand filtration.

This experiment was intended to get some data on the working of a sand filter when fed with water having little suspended matter.

The results are :

(a) Turbidity of the mechanical filtered water was between 1.6 to 2.8.

(b) Percentage of reduction in coliforms was 83% in mechanical filter and 97.5 percent in secondary slow sand filtration.

(c) 41.1 percent of organic matter was removed by double filtration, leaving 58.9 percent in solution unaffected.

(This experiment is a repetition of the one reported in G.O. No. 718 P.H., dated 11-4-1927 and G.O. No. 709 P.H., dated 15-3-1929).

The interesting facts emerging from the above observations are :

1. It would appear that chlorammated raw water feeding a slow sand filter would produce H_2S if the sand is not properly washed and used from time to time. The importance of using thoroughly washed sand is indicated.

2. It is not stated whether break-point method of chlorination or chloramination of raw water is to be preferred for slow sand filtration. That point is not decided.

3. How H_2S is produced even when chloraminated raw water containing no B. Coli is used to feed a slow sand filter is not stated.

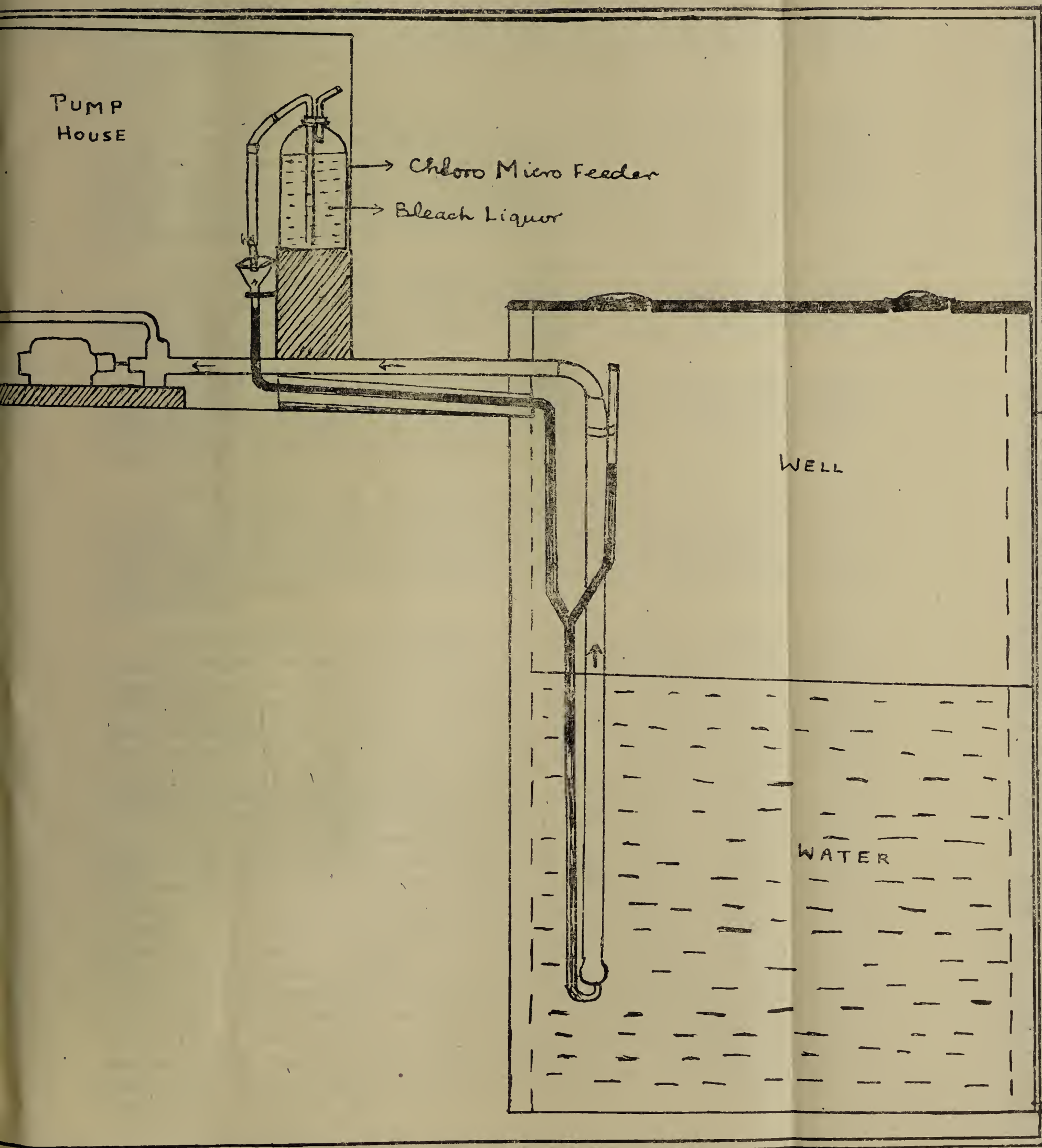
4. Any form of pre-treatment or double filtration ending in slow sand filtration is bound to produce H_2S sooner or later. So, slow or semi-slow sand filtration at any stage has to be ruled out for the Red Hills Reservoir water.

F. Staff :

Sri V. Kripakaran, B.Sc., Sri G. Deva Doss, B.Sc., and Sri George Samuel, B.Sc., continued to assist me during the year under report.

S. V. Ganapathi, B.A., M.Sc., A.R.I.C.,
Water Analyst

Fig II Chloro Micro Feeder in use for Chlorinating Wells in the City.



REPORT OF THE PUBLIC ANALYST 1952

The number of samples analysed in the Public Analyst's Laboratory during the year was 5,223. Among these 4,827 were under the Madras Prevention of Adulteration Act, 1918, as against 4,931 in 1951.

Of the 4,827 samples analysed under the provisions of the Madras Prevention of Adulteration Act, 1918, 2,180 samples were genuine and the remaining 2,647 samples were found to be adulterated. The percentage of adulterated samples for the year was 54.8 against 52.2 in 1951.

The samples consisted of milk, butter, ghee, gingelly oil, groundnut oil, cocoanut oil, coffee powder, tea, ghee substitutes, turmeric, arrowroot, and other articles. A statement of the samples analysed in 1952 and in the five previous years is given in the Appendix (Food Analysis - Statement No. 1). A graph showing the number of samples analysed and the percentage of adulteration each year from 1933 is also appended to this report.

The percentage of adulterated samples in 1952 was 54.8, a high figure and a slight increase over the figure for 1951. 2,810 samples, or 58 percent of the total samples were samples of milk, most of which were taken from the itinerant milk vendors.

The milk sold in the city by the itinerant milk vendors and the individual milk-men who trade on their own account have a high percentage of adulteration. The quality of milk sold by the Madras Co-operative Milk Supply Union continued to be satisfactory.

72.5 % of the milk samples were adulterated in 1952 against 76.0 in 1951. The adulteration of milk continued to be high. As pointed out by me in my previous report, so long as the price of milk is high and is in short supply and so long as the fines imposed by the Magistrates are not sufficiently deterrent, the temptation to make easy profits by adulteration will continue.

The percentage of adulteration of butter in 1952 was higher than in 1951, the respective figures being 29.1 and 30.4. The adulteration of ghee also showed an increase during the year 1952, the percentage of adulteration in 1952 being 31.3 against 24.0 in the previous year. The percentage of adulteration of gingelly oil in 1952 was 19.3 against 12.2 in 1951. The adulteration of groundnut oil, which has always been low decreased further during the year under report, the percentage of adulteration in 1952 and 1951 being 2.8 and 5.3 respectively. The adulteration of cocoanut oil also decreased from 9.8% in 1951 to 6.4 percent during the year. It is again a matter of gratification that during the year under report, there was not a single case of adulteration of any of the edible oils with mineral oil. The adulteration of coffee powder increased during the year the percentage of adulteration being 55.6 against 10.2 in 1951. It is not at all surprising that coffee powder registered this increase. As pointed out in the case of milk, the enormous increase in the price of coffee powder coupled with a shortage of supply must be deemed to be responsible for this increase in the adulteration of coffee. Fines imposed were not deterrent enough to discourage the unsocial elements. Tea was the only article which had an unbroken record of genuineness for the 18 years till 1950, but had returned a figure of 15.2 percent adulteration in 1951 against in 1952, tea was 100 percent genuine as in all the previous years except 1951. Out of the 26 samples of turmeric, only 1 contained lead in excess of the prescribed limit.

A new feature of the year was the analysis of samples of arrowroot. Action could not be taken in the previous year in respect of this

because it was contended that in commerce the term ' Arrowroot ' included a number of starches besides the starch of *Maranta Arundinacea*. Under the new rules regarding arrowroot, the sale of any starch other than that of *Maranta* is permissible only if the term " Arrowroot " is followed by the words " Not recommended for invalid diet ". Of the 93 samples of arrowroot analysed during the year under report, 22 samples consisted of 100 percent of Tapioca starch. In none of these cases, the articles had a label as per the above regulation and therefore action was taken against all the concerned vendors.

The details regarding the various articles of food analysed during the year under report are given below :

Milk :

2,810 samples of milk were analysed. Of these, 909 samples were cow's milk, 1146 were buffalo's milk, 1 sample was goat's milk, 697 samples were sold under the description of " mixture of cow's and buffalo's milk," 43 samples were described as milk without the qualification of cow's or buffalo's and 14 samples were described as reconstituted milk.

Of the 909 samples of cow's milk, 212 were genuine and 697 were adulterated. Among the adulterated samples, 607 contained added water ranging from 1 to 74 percent. There was deficiency in fat in 19 samples ranging from 17 to 97 percent and 71 samples were deficient in fat in addition to containing added water. The average values of fat and solids-not-fat for the 212 genuine samples of cow's milk were 5.0 percent and 9.1 percent respectively as against the average value of 5.0 percent fat and 9.0 percent solids-not-fat in 1951.

Of the 1,146 samples of buffalo's milk, 310 were genuine and 836 were adulterated. Among the adulterated samples, 692 contained added water ranging from 1 to 82 percent, 44 were deficient in fat from 4 to 98 percent, and 100 samples were deficient in fat besides containing added water. The average values of fat and solids-not-fat for 310 genuine samples of buffalo's milk were 6.7 and 9.6 percent respectively as against the average values of 6.8 percent fat and 9.4 percent solids-not-fat in 1951.

The one sample of goat's milk was adulterated and contained 50 percent added water.

Among the 697 samples of ' mixture of cow's and buffalo's milk,' 228 were genuine and 496 adulterated. Among the adulterated samples, 437 contained added water ranging from 1 to 79 percent, 10 were deficient in fat from 16 to 68 percent and 22 samples were deficient in fat besides containing added water. One of the above samples containing added water contained 0.6 percent cane sugar besides 46 percent added water.





Of the 43 samples described as milk without any qualification, 22 were genuine and 21 were adulterated. 11 of the adulterated samples contained added water ranging from 2 to 48 percent and the remaining 10 adulterated samples were also deficient in fat besides containing added water.

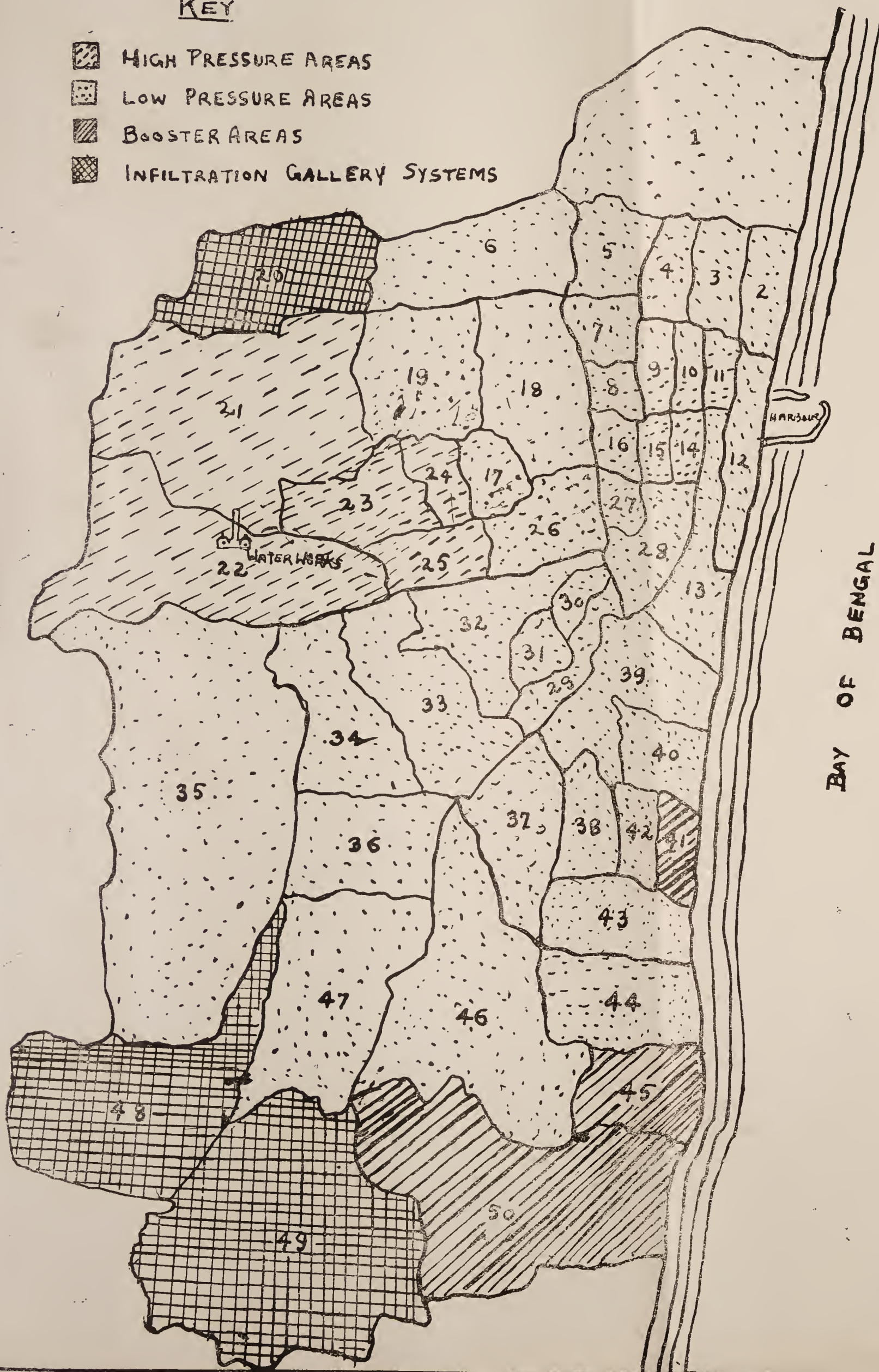
14 samples of reconstituted milk were analysed and the samples which did not satisfy the prescribed standard of purity for cow's milk were reported as adulterated. Among the adulterated samples, there was fat deficiency to the extent of 97 per cent in one sample, deficiency in solids-not-fat from 8 to 11 per cent in 3 samples and the remaining 8 samples were deficient in both fat (6 to 35 per cent) and solids-not-fat 9 to 44 per cent.

Map Showing The High Pressure, Low Pressure, Booster Areas and the Infiltration Gallery Systems of the City Water Supply.

Fig. I.

KEY

-  HIGH PRESSURE AREAS
-  LOW PRESSURE AREAS
-  BOOSTER AREAS
-  INFILTRATION GALLERY SYSTEMS



Among the 2,796 milk samples of all the above categories except re-constituted milk, 1,951 samples contained added water and the average content of added water in these 1,951 samples was 25% as against 29% during 1951.

Butter : 470 samples were analysed, of which 286 samples were genuine and the rest, adulterated. In 144 of the adulterated samples, the water content ranged from 21.0 to 74.8 %, the prescribed maximum limit of water being 20%. 20 of these 144 adulterated samples also contained fat other than milk-fat besides excess water. The remaining 40 adulterated samples of butter had a water content within the prescribed maximum limit, but were however adulterated with foreign fat. The extent of adulteration among the 60 samples of butter which contained foreign fat ranged from 10 to 86%.

The average water content of the 286 genuine samples of butter was 17.4 against 17.7 during 1951 and the corresponding figure for the 144 adulterated samples which contained excess water was 40.9 as against 44.8 in 1951. Among the 60 samples of butter which contained foreign fat, the average percentage of foreign fat was 35 as against 30 in 1951.

It has to be mentioned that the adulteration of butter with foreign fat which was absent for nearly two decades is now very much on the increase. Therefore the general impression among the public that they could get pure ghee by buying butter and melting it into ghee is erroneous.

Ghee : 683 samples analysed. Of these, 214 samples were adulterated with fat other than milk-fat, the common foreign fat used for the adulteration of these samples being Vanaspati (mostly hydrogenated groundnut oil). The extent of adulteration ranged from 16 per cent to entire substitution. The average admixture of foreign fat in the adulterated samples was 74 per cent.

Gingelly oil : 362 samples were analysed of which 69 were adulterated with groundnut oil from 10 to 90 per cent and 1 sample was adulterated with 75 per cent coconut oil.

36 samples were analysed, of which 1 sample was reported as adulterated as it contained 50 per cent gingelly oil.

Coconut oil: 156 samples were analysed and 10 of them were adulterated with groundnut oil. The extent of adulteration varied from 5 to 60 percent.

Coffee powder : 169 samples were analysed, of which 94 were adulterated. Of the adulterated samples, 33 samples were adulterated with Bengal-gram, 1 sample with Bengal-gram husk, 13 samples with Pea, 7 samples with date seed, 2 samples with spent (exhausted) coffee, 2 samples with unidentified seeds. 10 samples with chicory, 1 sample with coffee pericarp and the remaining 25 samples with preparations containing various proportions of more than one of the above-mentioned adulterants.

Tea : 35 samples were analysed and all of them were genuine.

Ghee substitutes : 30 samples were analysed, of which 1 sample contained 11.3 per cent water and the balance of a mixture of ghee and Vanaspati, 4 samples consisted of mixtures of ghee and Vanaspati and the remaining 25 samples consisted entirely of Vanaspati (mostly Hydrogenated groundnut oil) of various brands and makes.

Other articles : There were 76 samples under this head. These consisted of 25 samples of Thoovar Dhall, 26 samples of Turmeric, 23 samples of Arrowroot, 1 sample of Halva, and 1 sample of Wheat flour.

Out of the 25 samples of Thoovar Dhall, 10 were reported as adulterated as they contained a coal-tar colour, the addition of which is prohibited under the Madras Prevention Adulteration Rules, 1932.

Out of the 26 samples of Turmeric, 1 was reported as adulterated as it contained 20 parts per million of lead (limit 5 parts per million).

Out of the 23 samples of Arrowroot, 22 consisted of 100 per cent Tapioca Starch (the starch of *Manihot utilissima*) and 1 sample consisted of 100 per cent of Curcuma starch (starch of *curcuma angustifolia*). There was

no sample of genuine arrowroot (*Maranta arundinacea*) among the samples of arrowroot analysed during 1952.

The sample of Halva was reported genuine (in respect of the ghee used in the preparation of the halva) and the sample of wheat flour consisted of 100 per cent wheat flour.

Besides the formal samples dealt with above, which were taken under the Madras Prevention of Adulteration Act, 396 miscellaneous samples were examined in the laboratory during the year under report. Of these, 326 were samples of milk taken informally from the Madras Co-operative Milk Supply Union in order to check the purity of the milk before it was distributed to the city. These were in addition to the formal samples taken regularly from the sales depots and delivery-boys of the Union, which are included among the formal samples dealt with in the earlier part of this report. Among the 396 miscellaneous samples are also included 35 samples of food analysed for private parties on payment of the prescribed fees.

A statement of the miscellaneous samples is given below:

Nature of sample	Results of analysis
362 samples from the Madras Co-operative Milk Supply Union	295 samples were genuine and gave solids-not-fat above 9.0 per cent and 30 samples which gave solids-not-fat between 8.0 and 9.0 per cent were reported at below standard
3 samples Reconstituted milk from the Health Department	2 samples were genuine and one sample was deficient in solids-not-fat
2 samples of skimmed milk powder from the Health Department	Both unfit for consumption
1 sample of condensed milk from the Health Department	Unfit for consumption
5 samples of gingelly oil from the Health Department	All genuine
4 samples of gingelly oil from the Health Department	do
1 sample of Arrowroot from the Health Department	100 per cent Tapioca Starch
2 samples of curry powder from the Health Department	Unfit for consumption
2 samples of bleaching powder from the Health Department	Contained 15.7 and 37.0 per cent available chlorine
15 samples of Transformer oils from the Health Department	Reports on the inorganic and organic acidities were made

The remaining 35 samples were analysed for private parties on payment of fees, and these consisted of 5 samples of milk, 23 samples of ghee, 1 sample of gingelly oil, 3 samples of cocoanut oil and 3 samples of Thoovar Dhall. The amount of fees collected during the year under report was Rs. 290 against Rs. 180 in 1951.

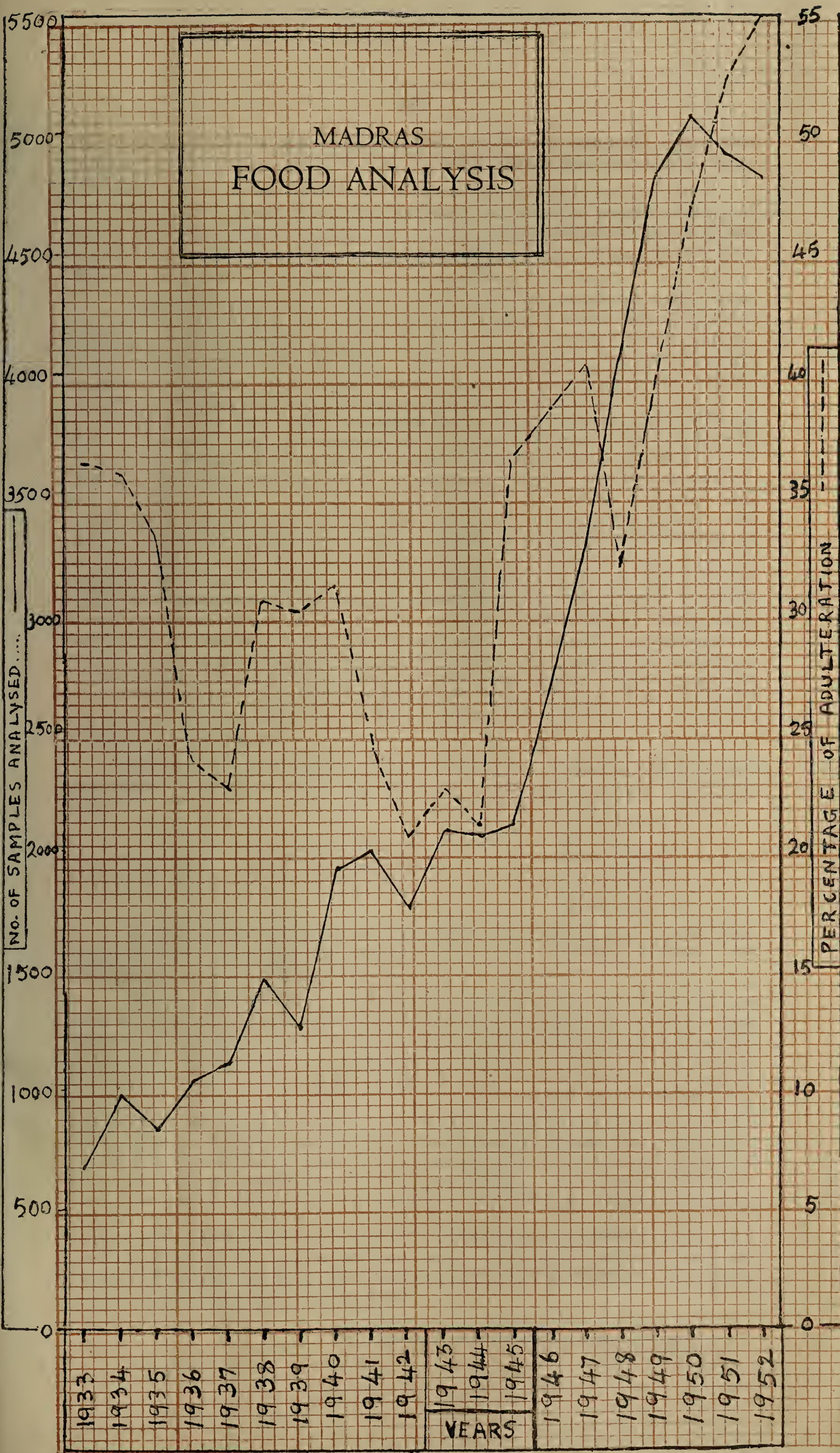
A tabular statement on the action taken on the adulterated samples of 1952 and those of 1951 pending disposal on 1st January 1952 is given in the Appendix (Food Analysis—Statement No. II).

The number of samples reported as adulterated during the year under report was 2,647. Action taken in respect of these samples is given below:

Warning of vendors in cases where adulteration was slight	..	60
Prosecution of vendors	...	2,587
	Total	2,647

Of the 2,587 prosecutions instituted, convictions were obtained in 1,035 cases. There were 3 withdrawals and 2 acquittals and the remaining 1,547

MADRAS FOOD ANALYSIS



cases were pending disposal on 31st December 1952. Among the 2,126 cases relating to the period prior to 1st January 1952, 571 convictions were obtained.

The total number of convictions for the sale of adulterated articles of food in 1952 was 1,606 as against 1,817 in 1951. The amount of fines imposed in 1952 was Rs. 49,757 against Rs. 62,647 in 1951. The average fine per conviction in 1952 was Rs. 31 against Rs. 34 in 1951.

During the year under report, there were 10 convictions under section 14 (3) of the Madras Prevention of Adulteration Act for preventing the Food Inspectors from taking samples under section 14 (1) of the Act and the fines imposed amounted to Rs. 345. There were only two cases of Warranty Defence during the year under report. In both these cases, the vendors concerned were acquitted and the warrantors were convicted.

There were two cases pertaining to samples of Badusha and Mysore Pak respectively, which were prepared in adulterated ghee. The sweetmeats were taken from two prominent hotels of Madras City. In the case of Badusha, there was representation by means of a Board that the sweetmeat was prepared in ghee. In the case of Mysore Pak, there was only oral representation to the same effect. The proprietors of both the hotels were duly prosecuted but both of them were acquitted by the Magistrate mainly on the plea that it is not possible to analyse the ghee once it enters into the composition of the sweetmeat. Both the cases were taken on appeal to the High Court and after taking fresh evidence of the Public Analyst, the High Court reversed the above judgment of the Magistrate in both cases especially in regard to the Magistrate's remarks on the possibility of analysis of the ghee extracted from a sweetmeat. The proprietor in respect of the sample of Badusha was convicted and fined Rs. 50. However, in the case of Mysore Pak, since the representation was only oral and that only by the servant, the proprietor was acquitted on the ground that the representation was not adequate.

During the year under report, the post of a fourth assistant was sanctioned. The names of the assistants to the Public Analyst are given below :

1 Sri S. Sundaram, M.A.	... 1st Assistant
2 Sri B. Ramalingam, M.Sc.	... 2nd Assistant
3 Sri V. V. Ramana Rao, M.Sc.	... 3rd Assistant
4 Sri C. Rajaganapathi, B.Sc.	... 4th Assistant
	(from 4-6-52).

During the year 1952, I was on long leave for nearly five months from 21st July 1952 and during the period of my leave, my first Assistant, Sri S. Sundaram acted as Public Analyst.

For the past several years, I have been concluding my Annual Report with fervent appeals to the Magistrates to impose sufficiently deterrent fines in Food Adulteration cases. Far from such appeals effecting an improvement in the fines, the fines have progressively declined in recent years. The average fine per conviction during 1952 was Rs. 31. The average fine per conviction was Rs. 59 in 1944 and has since been decreasing year by year. Apart from the fact that the low fines result in a loss of income to the Corporation, the effect of such low fines on the vendors, especially during the years when prices of food stuffs have ruled enormously high, has been just the opposite of what juridical punishments are intended to produce. In short, the vendors have ceased to be afraid of such prosecutions with the result that adulteration has not only not decreased but actually increased in the case of some food stuffs. I, therefore, once again appeal to the Magistrates to impose sufficiently deterrent fines in Food Adulteration cases. During the last five years, the number of samples taken by the Corporation has almost doubled but in spite of this, adulteration has not decreased.

V. VENKATACHALAM, M.A., A.I.R.C.,
Public Analyst

Child Welfare Scheme

The Child Welfare Scheme was brought under the control of the Health Officer from 1st April 1952. The scope and activities of the Scheme were enlarged to a great extent by his good advice, able guidance and strict supervision during the year under review. The following outstanding features of the Scheme during the year need special mention over and above its useful and normal work from year to year. (1) The sub-centre at Kodambakkam was raised to the position of a regular centre with a ward with 11 beds (2) Family Planning Clinics were started in August 1952 at Choolai Maternity Home, George Town and Washermanpet Maternity and Child Welfare Centres ; (3) the serological examination of blood of all ante-natal cases was also started in May 1952 in two more centres at Sanjeeviroyanpet and Triplicane totalling to 4 centres in all and (4) introduction of Post-natal Clinics and infants' and toddlers' clinics in all the centres from August 1952. All the post-natal cases whose deliveries are conducted by the Child Welfare Scheme are given thorough check-up by the Assistant Surgeons after the 15th day of delivery.

The Advisory Board constituted in August 1951 for investigation of maternal deaths and for formulating suggestions for improving maternity services met on 16-6-1952 and 26-6-1952 and reiterated the recommendations previously made that every maternity home should have a doctor in attendance throughout 24 hours. Action has already been taken to implement the recommendation of the Advisory Board in Choolai Maternity Home and proposals are under consideration to appoint doctors on shift duty in other big maternity centres so that these centres will have the services of a Medical Officer at all times of the day.

Family Planning Work : Family Planning Clinics were started at Choolai Maternity Home, George Town and Washermanpet Child Welfare Centres from 1-8-1952 as already mentioned above. The Assistant Surgeons of the respective centres conduct the clinics twice a week and the Health Visitors and Midwives, during their home visits, contact women, especially multiparous women and encourage them to attend Family Planning Clinics to take advice from the concerned Assistant Surgeons on Family Planning. A nominal fee of annas 8 each is charged for the appliances supplied, but poor women who cannot afford to pay even this small amount are given instructions to use simpler and cheaper methods of contraceptives. It is too early to say how far our attempts in this direction will prove successful.

Serological examination of blood of ante-natal cases : The total number of blood samples examined, the number of positive and negative cases and the number of cases treated during the year 1952 are noted below :

No. of blood samples examined	No. of positive cases	No. of negative cases	Number treated	Ramarks.
5,593	237	5,356	214	All positive cases were treated free of cost with "P. A. M." (Procaine Penicillin G in oil with 2% Aluminum Monostearate) donated by UNICEF at a total dosage of 4.8 million units in doses of 4 injections for each patient.



Maternity and Child Welfare Centres: During the year report, there were 27 Child Welfare Centres, 3 sub-centres, 18 maternity wards and 3 creches under the control of the Child Welfare Scheme as against 26 Child Welfare Centres, 4 sub-centres, 17 maternity wards and 3 creches in the previous year. The sub-centre at Kodambakkam was converted into a pucca centre with a ward attached to it as stated at the beginning of this report. The number of beds in the maternity wards was 223 against 199 in the previous year showing an increase by 24 beds. The Corporation is now constructing two buildings, one at Ayanavaram and the other at Bharati Road, Perambur, for maternity and child welfare centres, out of the loan amounts sanctioned by the Government for this purpose. The construction is in progress and the two buildings, it is hoped, will be ready for the occupation of maternity and child welfare centres during the next.

The creches at Broadway, Royapuram and Chetpet which are intended for the benefit of working mothers continue to be popular. But, want of accommodation in the Creches prevents us from taking in more children. The children are given the necessary toilet, change of clothing, nourishing food, adequate rest, games and nursery education during their stay in the creche from 8 a.m. to 5 p.m. Action songs, story telling, moral instruction, handicraft and prayer are being taught by the nursery trained teacher. Any ailment of the child is attended to by the doctor in charge and treated immediately. The average number of children looked after daily in Broadway, Royapuram and Chetpet creches is 48, 30 and 21 respectively. The expenditure incurred by the Corporation on the maintenance of the creches for the year 1952-53 was Rs. 21,768.

Staff: Capt. (Miss) C. N. Rukmini, M. B. B. S., the Lady Superintendent, was in charge of the Scheme during the year. There were 29 Assistant Surgeons (the designation of the lady doctors was changed as Assistant Surgeons by the Council in its resolution dated 21-10-1952) including one relieving Assistant Surgeon, 30 qualified health visitors, 8 general trained nurses, 230 midwives and 26 compounders under the Scheme.

Pre-natal clinics: The Assistant Surgeons conducted pre-natal clinics thrice a week regularly in each centre. The health visitors and midwives during their home visits advised expectant mothers to attend these clinics. 41,430 new expectant mothers attended the clinics and were given medical advice and treatment by the Assistant Surgeons against 40,639 in 1951. The health visitors registered 42,208 expectant mothers in the houses of the patients against 41,174 registered in the previous year. The patients were advised by the Assistant Surgeons and followed up by the health visitors till their confinement. A good number of mothers was benefited by the instructions, advice and treatment given at these centres.

Maternity Service: The total number of births in the City for the year was 62,921 against 58,961 in the previous year. The number of labour cases that came under the care and observation of the Scheme was 32,264 against 29,861 in the previous year. 13,982 births were conducted in the Corporation maternity wards during the year against 12,052 in the previous year. The midwives paid 2,66,200 visits, health visitors 1,20,121 visits and the Assistant Surgeons 28,304 visits to the houses of the patients against 2,51,530 visits 1,21,747 visits and 30,734 visits respectively in the previous year. Among births, there were 268 twins and 880 still-births. The percentage of still births works out to 2.7.

A sum of Rs 15,983-12-0 was collected during the year as fees for maternity services rendered to patients against Rs. 19,422-0-0 in 1951. The fall in collection is due to (1) raising of the income level of free service from

Rs. 81 to Rs. 100 and (2) the reduction of maternity fees from Rs. 25 to Rs. 15 for the income group from Rs. 101 to Rs. 200.

Maternal Mortality: Out of 32,264 cases of labour that came under the care of the Scheme, 56 cases of maternal mortality were recorded as noted below against 57 in the previous year. The maternal mortality rate works out to 1.73 per mille against 1.90 per mille in 1951.

		Maternal deaths	
		1952	1951
Child Welfare Scheme	...	2	5
Hospitals	...	49	48
Private doctors	...	4	4
Vaidyans	...	1	...
		<hr/> 56	<hr/> 57

Infant Mortality: Out of 29,861 births in the year 1951, 838 were still births. The remaining 29,023 babies were kept under observation during the final year of life in 1952 against 26,280 babies kept under observation during 1951. The mortality among live-births was 3,291 against 2,871 in the previous year. 2,786 babies left the city or were otherwise not traceable against 2,969 in the previous year. The infant mortality rate is 125.43 per mille against 123.16 per mille in 1951. No specific reason can be assigned to this slight increase in the infant mortality rate.

Cut-patient clinics: The Assistant Surgeons conducted out-patient clinics in all the centres as usual. Infants, pre-school children, expectant and nursing mothers were examined, advised and treated for minor ailments. 64,570 infants, 37,265 toddlers, 75,718 nursing mothers and 41,430 expectant mothers represent the new cases that were treated and advised. The total number of new cases that attended the clinics was 2,18,983 and the number of old cases was 5,00,215 making a total of 7,19,198 cases.

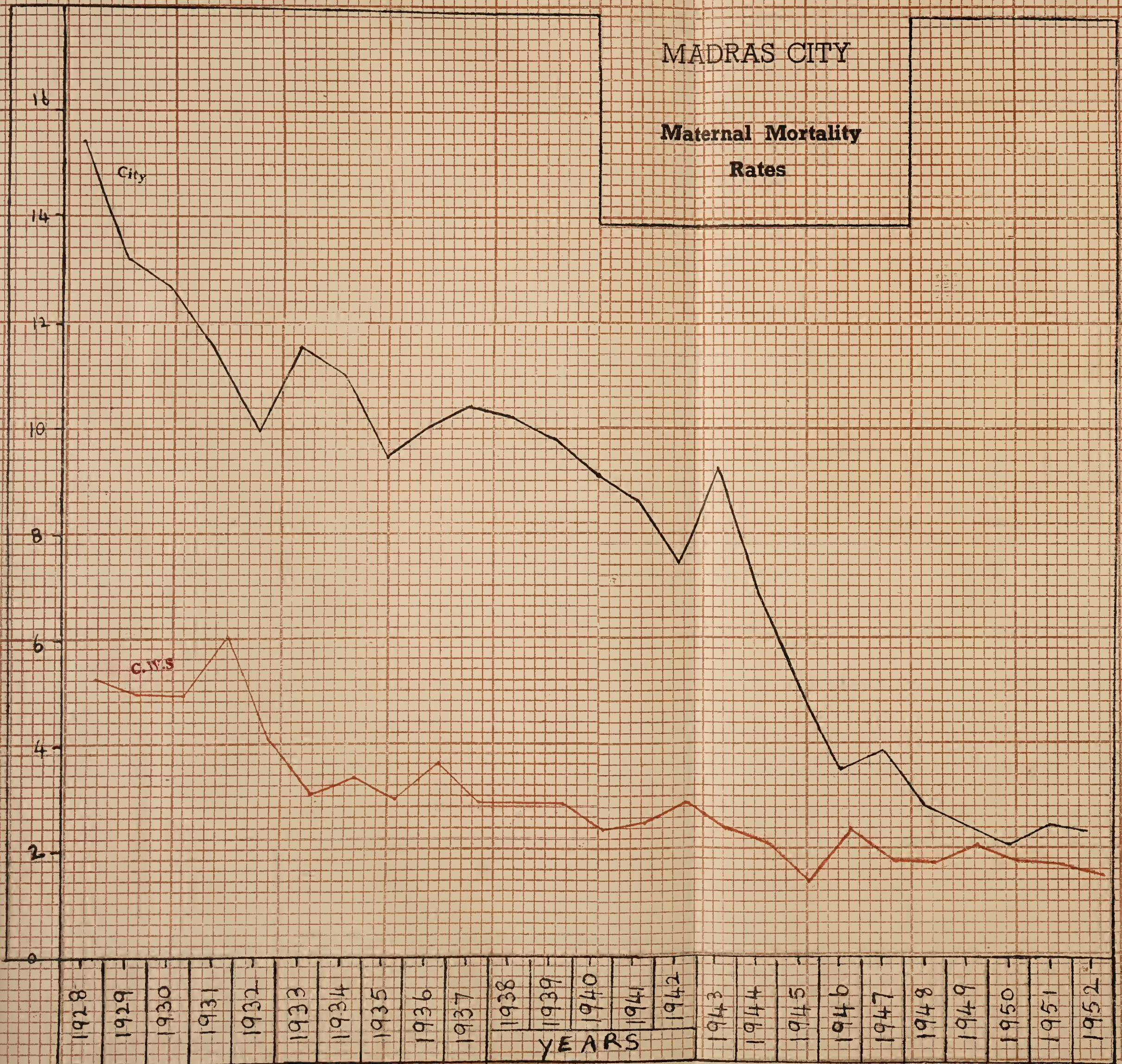
Ambulance: One more ambulance car was purchased on 3-12-1952 and there are at present three ambulance cars for removing emergent cases of labour to the various hospitals in the city. 2,429 such cases were removed to the hospitals during the year under report.

Milk supply: Cow's milk was supplied free of cost to priority consumers during the year at 4 measures per day per centre, two measures in the morning and two measures in the evening. 2,568 infants, and 13 toddlers received the benefit of the milk supply during the year.

The stock of skimmed milk powder supplied by the Madras Branch of the Indian Red Cross Society was exhausted in May 1952 and no more supply was made by them.

C. N. RUKMANI

Lady Superintendent



MAP OF MADRAS CITY

SCALE 1"=1 MILE.



REFERENCE

- ★ CHILD WELFARE CENTRE WITH MATERNITY WARD
- ☒ CHILD WELFARE CENTRE
- CHILD WELFARE SUB-CENTRE
- † CRECHES

S.	D.	M.	LOCATION.
1	1	★	385, THIRUVOTIYUR HIGH RD, TONDIA PET.
2	2	☒	26, SURYANARAYANA CRETTY ST, ROYAPET.
3	2	☒	NEAR CORPN. MODEL LINE, PALMYRA KOPPA.
4	5	★	86, THIRUVOTIYUR HIGH ROAD, WASHINGHAM PET.
5	4	★	21/22, KAPPAL POLICERTTY ST.
6	6	★	44, AMMEN KOIL ST, GEORGETOWN.
7	11	☒	175, THAMBBO CRETTY ST, MUMIAL PET.
8	10	★	1/27, APPU MAISTRY ST, K. BAZAAR.
9	16	★	52, TRAVULEYEN BASIN ST, SOMCARPET.
10	25	☒	2/3, PERIERS ST, PARK TOWN.
11	17	★	15, VISTAVIGNESWARAR KOIL ST, COOLBA.
12	20	★	45, PAPER MILLS ROAD, SEMOIAM.
13	13	★	54 & 55, PERAMBUR HIGH RD, PERAMBUR.
14	13	★	1/33, GANTZ ROAD, PULIANTHOPPE.
15	23	★	109, PURASAWALKAM HIGH RD, PERIYAR.
16	21	★	19, HALLS ROAD, KILPAUK.
17	27	★	27, JAGANATHAPURAM, SICHET PET.
18	31	☒	37, LONGS GARDEN RD, EGMORE.
19	48	★	TEEMIS ROAD, SAIDAPET.
20	26	★	4/8, NAVAL HOSPITAL RD, PERIAR.
21	31	★	2/3, KUPPU NATHU MOBALI ST, TRIPLIK.
22	43	☒	65, DE. DEBANT ROAD, MILLER SANPET.
23	44	☒	48, BAZAAR ROAD, MYLAPORE.
24	37	☒	84, LLOYDS ROAD, ROYAPETAM.
25	50	☒	34, BRODIES ROAD, MANDAVALL.
26	49	★	44, VASANTHAPRESS RD, ADYAR.
27	46	●	104, HUNTER RD (CORPN. DISPENSARY).
28	36	●	3, SIVAGANAM RD, T. NAGAR.
29	31	●	7, GURUPAPPAMISTRY ST, ATANAGAR.
30	35	★	68, ARCOOT RD, KODAMBAKKAM.
1	9	+	BUNDER RANA HICKER GARDEN, BRADWAY.
2	3	+	AT 207 APURAM CHILD WELFARE CENTRE.
3	33	+	AT ERLI PET.

Summary of Annual Report of the Madras Port Health Officer for the year 1952.

1. Out of 589 vessels with 37,644 crew and 29,568 passengers inspected on arrival during the year, only two were infected. From these infected vessels, 3 cases of Chicken-pox were landed at this port. Necessary sanitary and preventive measures were taken in these cases.

589 vessels (including country crafts) left this port during the year. 358 of these (including country crafts) with 28,804 crew and 39,670 passengers were inspected at the time of departure.

2. 17 cases, 15 boxes, 4 bundles, 6 bales and 1 bag of second-hand clothing were disinfected before release by the Customs Authorities. Portions of three vessels occupied by Pulmonary Tuberculosis cases were also disinfected.

Bedding, clothing etc., of 886 new crew were inspected and disinfected before being taken on board.

3. 2 prospective passengers suspected to be suffering from Chicken-pox in the early eruptive stage with temperature were prevented from sailing. A child suffering from Measles and 4 contacts were also prevented from sailing.

4. Lascar provisions of 52 vessels and 137 tins of ghee were inspected and sealed before being taken on board. In all, 6 samples of ghee including 1 collected on board were sent to the Chemical Examiner. One of them indicated high acid value on analysis and immediate action was taken to replace the entire lot from which this sample was collected.

5. Food grains and other unclaimed food stuffs were examined at the request of the Assistant Director of Clearance, Madras, and the Chairman, Madras Port Trust. These consisted mostly of damaged, deteriorated stuff and often containing a large proportion of deck sweepings, i.e. 9 measures of paddy, 2,502 bags of milo, 13 bags of rice all of which were unfit for human consumption. 915 bags of wheat were examined, 750 of these contained a fairly good amount of good grains and as such were cleaned and sorted for re-examination. The remaining 164 bags were found to be unfit for human consumption. 106 lots of unclaimed food stuffs were inspected and 46 of these were found to be fit for human consumption.

Food grains and food stuffs declared unfit for human consumption were either burnt in the incinerators or dumped in the sea.

6. 382 seamen trainees, seamen for continuous certificate of discharge and other candidates for employment as seamen were medically examined and certificates of fitness or otherwise issued.

7. 6 monkeys brought into this port in contravention of the rules in force were sent to the Veterinary College for destruction.

8. On receipt of radio messages from the Masters of seven vessels at sea seeking medical advice in connection with sickness on board the vessels, necessary advices were despatched immediately.

9. Sanitation of the Port area was maintained satisfactorily by the Madras Port Trust. Storage tanks of water supply of the Port area were cleaned regularly and water from these sources was analysed at regular intervals. Measures were taken to rectify defects when noticed.

INSTITUTIONS UNDER THE DEPARTMENT.

Offices of Registration of Births and Deaths

Serial No.	Divisions Served	Location
1	1, 2 & 3	87, Suryanarayana Chetty St., Rayapuram
2	4 & 5	546, Thiruvottiyur High Road, Washermen pet
3	6	55, Madhawaram High Road
4	7, 8, 9 & 10	244, Mint Street
5	11, 12 & 13	47, Lingi Chetty Street
6	14, 15	161, Govindappa Naicken Street
7	16	183, Walltax Road
8	17	Rotler Street, Vepery
9	18 & 19	55, Pulianthope High Road
10	20	23, Paper Mills Road, Sembiam
11	21	127, Konnur High Road, Ayanavaram
12	22-A	65, Poonamallee High Road, near Spur Tank
13	22-B & 35-B	100, do. Aminjikai
14	23, 24 & 25	6, Gangadareswarar Koil Street, Purasawalkam
15	26	69, Maddox Street, Vepery
16	27 & 28	23, Kolandai Street, Park Town
17	29 & 30	3/61, Arunachala Naicken St., Chintadripet
18	31 & 32	34, Poosala Gengu Reddy Street, Egmore
19	33 & 34	15, Ncor Veerasami Iyer St, Nungambakkam
20	35-A	68, Arcot Road, Kodambakkam
21	36 & 47-A	3, Sivagnanam Road, T' Nagar
22	37, 38, 39 & 40	369, Pycrofts Road, Pudupakkam
23	41 & 42	25, Pycrofts Road, Triplicane
24	43 & 44	101, Kutcheri Road, Mylapore
25	45 & 50-A	63, do.
26	46	104, Mount Road, Teynampet
27	47-B 48	2, Jeenis Road, Saidapet
28	49	32/5, Velacheri Road, Guindy
29	50-B	12, Bridge Road Adyar

Offices of Sanitary Inspectors

Divn. No.	Location
1	21/22, Kappal Polu Chetty St.
2	Kalmandapam Rd:
3	Robinson Park
4	546, Thiruvottiyur High Road, Washermanpet
5	do do
6	Hope Lodge, Gantz Road
7	Model Cattle Yard, Basin Bridge Road
8	244, Mint St.
9	do.
10	Junction of Monegar Choultry Rd. & Ebramji Sahib St.
11	1/32, do do.
12	6/17, Adam St. Harbour
13	47, Linghi Chetty St.
14	3/48, Thatha Muthiyappan St.
15	183, Wall Tax Road
16	do. do.
17-A	39, Veda Vinayagar Road
17-B	do
18	55, Pulianthope High Road
19	1-B, Bashyam Reddy 1st St.
20	25, Paper Mills Road, Sembiam
21	39, Konnur High Road, Ayanavaram
22-A	65, Poonamallee High Road, Kilpauk
22-B	100, do Aminjikai
23	6, Gangadareswarar Koil Road
24	39, Vedavinayagar Road
25	65, Poonamallee High Road
26	66, Maddox St, Vepery
27	26, Nannian St., Park Town

Divn. No.	Location
28	23, Kolandai St.
29	Adikesavalu St., Chintadripet
30	72, Kalavai Chetty St., Chintadripet
31	83, Harris Road
32	34, Gengu Reddy St., Egmore
33	16-A, Nungambakkam High Rd.
34	21, Village Rd.
35-A	68, Arcot Rd., Kodambakkam
35-B	100, Poonamalle High Road Aminjikarai
36	3, Sivagnanam Rd., T' Nagar
37	368/369, Pycrofts Road
38	do
39	102, Thayar Sahib Street
40	21, Pycrofts Road
41	do
42	22, Chengalroya Mudaly Street, Triplicane
43	25, Barbers Bridge Road
44	101, Katcheri Road, Mylapore
45	do. do.
46	104, Mount Road, Teynampet
47-A	3, Sivagnanam Road
47-B	Jeenis Road, Saidapet
48-A	32, Razack Market Saidapet
48-B	Jeenis Road, Saidapet
49	16, Velacheri Road, Guindy
50-A	Mandavali St, Mylapore
50-B	Bridge Road, Adyar

Dispensaries

Serial No.	Divn. No.	Name	Location
1	1	Rayapuram Disy	87, Suryanarayana Chetty St.
2	5	Washermanpet „	85, Tiruvottiyur High Road
3	6	Vyasarpady „	Hope Lodge, Gantz Road
4	6	Perambur „	55, Madavaram High Road
5	8	Mint „	244, Mint Street
6	11	Harbour „	6-7, Adam Street
7	14	Mafuzkhan Garden „	55, Thatha Muthiappan St.
8	16	Trevelyan Basin „	17 Trevelyan Basin Water works Street
9	17	Baliah Naidu „	Rotler Street
10	20	Sembiam „	Paper Mills Road
11	21	Ayanavaram „	39, Konnur High Road
12	23	Kilpauk „	6 Gangadareswarar Koil St.
13	24	Kosapet „	8 Chellappa Mudali Street
14	29	Chintadripet „	2-61, Arunachella Naick St.
15	32	Egmore „	34, Gengu Reddy Street
16	34	Nungambakkam „	11, Veerasamy Iyer Street
17	35	Kodambakkam „	68 Arcot Road
18	37	Pudupakkam „	367, Pycrofts Road
19	41	Triplicane „	21, do
20	43	Krishnampet Disp	25, Barbers Bridge Road
21	45	Mylapore „	101, Katcheri Road
22	46	Teynampet „	104, Mount Road
23	47	T. Nagar „	3, Sivagnanam Road
24	50	Adyar „	Lattice Bridge Road
25	33	Ayurvedic „	Model School Street, Thousand Lights
26	13	Mannady Unani	47, Linghi Chetty Street
27	18	Puliantope „	55, Puliantope High Road
28	31	Pudupet „	1, Venkatachala Achari Street
29	39	Thiruvateeswaranpet Unani	130, Thyar Sahib Street
30	3	Royarpuram Siddha	102, Adam Sahib Street
31	17	Choolai „ „	16, Alathoor Subramania Achari Street
32	19	Otteri „ „	1-B Bashyam Reddy 1st St

Clinics

Venereal clinic	82/83 Strahans Road, Perambur
Leprosy clinics	Ice House Road (Besant Road), Triplicane
	Hope Lodge, Vyasarpady
T. B. Clinics	Pulianthope High Road
	Government General Hospital
	Government Stanley Hospital
	Government Royapettah Hospital
	Kasturba Gandhi Hospital

Laboratories

	Public Health Clinical Laboratory
	Ripon Buildings
	Public Analyst's Laboratory
	Ripon Buildings
	Water Analyst's Laboratory
	Kilpauk Water Works
	Malaria Laboratory
	17, Trevelyan Basin Water Works Street

Hospital

	Infectious Diseases Hospital
	Tiruvcttiyur High Road, Tondiarpet
	Sri Tiruvotteeswar Tuberculosis Hospital
	391, Konnur High Road, Otteri

Ashok Vihar Health & Recreation Centre, People's Park

Zoological Gardens, People's Park

Lethal chamber, Basin Road

Poor Relief

Work House for	} Suryanarayana Chetty Street
able bodied beggars	
Poor House	
Orphanage	} Krishnampet
Special Home for the	
diseased and infirm	

Mid-day meals centres

	Basin Road-Kondithope-North Range
	Iyah Mudali Street-Chintadripet Central Range
	Conran Smith Road Gopalapuram-South Range

Veterinary Dispensaries

	Basin Road, Kondithope
	Barbers Bridge Road, Krishnampet
	Prasanna Vinayagar Temple Road Mylapore

Cattle Depots

	A—Old Slaughter House Road, Royapuram
	B—Basin Road, Kondithope
	C—Avadanampapier Road, Choolai
	D—Harris Road, Mount Road
	E—Barber's Bridge Road, Krishnampet
	F—Prasanna Vinayagar Temple Road Mylapore
	G—High Road Perambur,
	H—Thirumalai Pillai Road, T. Nagar North
	I—Vinayakampet, Saidapet

Corporation Cattle Yards

	Basin Road, Kondithope
	Singanna Chetty St., Chintadripet
	Vinaithirtha Vinayaga Mudali Street, Kosapet
	Venkatarangan Pillai, St Saidapet

Slaughter Houses

	Sheep and Cattle
	Gantz Road—Perambur Barracks.
	Alandur Road, Saidapet
	Pigs
	Junction of Basin Rd. and Pulianthope
	High Road

Dumping grounds

Otteri in Brick Kiln Road Otteri
 Korukkupet Opposite Korukkupet R. S.
 Krishnampet near E. Cattle depot
 Ellapada Mada Koil, St. Marys Road

Compost yards

Korukkupet dumping ground
 Otteri do

CHILD WELFARE CENTRES

No.	Centres	Location	Phone No.	No. of Beds	Date of opening
1	Tondiarpet	315, Thiruvotiyur High Rd....	4615	15	13— 8—47
2	Royapuram	26, Suryanarayana Chetty St.	2146	...	3—11—24
3	Palmyrah kuppam.	Near Corpn, Model Line ...	2780	...	10— 9—49
4	Washermenpet	86, Thiruvotiyur High Rd...	3258	12	26— 5—19
5	Sanjiviroyanpet.	21/22, Kappal Polu Chetty St.	2319	13	23— 3—48
6	George Town	44, Ammen Koil St. ...	3697	15	17— 5—22
7	Muthialpet	175, Thambu Chetty St ...	3121	...	24— 8—24
8	Kothwal Bazaar	1/27, Appu Maistry St. ...	4615	8	24— 9—47
9	Treveleyen Basin	52. Treveleyen Basin St. ...	3128	12	19— 7—45
10	Park Town	2/3, Periera Street ...	4522	...	30— 5—40
11	Choolai.	15. Vijaya Vigneswarar Koil St.	4617	34	29— 8—47
12	Sembiam	45, Paper Mills Road ...	2606	8	9— 9—46
13	North Perambur.	54 & 55, Perambur High Rd. ...	4523	9	31— 5—40
14	Pulianthope	1/33, Gantz Rd ...	3880	14	15— 9—50
15	Purasawalkam...	109, Purasawalkam High Rd.	3035	7	Oct. 1919
16	Kilpauk	19, Halls Road ...	55446	6	28— 6—44
17	Chetpet	27, Jaganathapuram 2nd St.	8166	6	24— 9—23
18	Egmore	37, Langs Garden Rd. ...	86519	...	7— 7—23
19	Saidapet	Jeenis Road ...	88265	16	28—11—49
20	Periamet	4/8, Naval Hospital Road...	4341	7	7— 3—46
21	Triplicane	2/3, Kuppu Muthu Mudali St.	86505	11	15— 9—17
22	Mirsahibpet	65, Dr. Besant Road ...	86947	...	25—10—41
23	Mylapore	48, Bazaar Road ...	86570	...	4— 8—24
24	Royapettah	84, Lloyds Road ...	86644	...	9—10—29
25	Mandavali	34, Brodies Road ...	86614	...	14— 2—46
26	Adyar	44, Vasantha Press Rd. ...	85427	6	31—10—47
No. of Beds				...	199

SUB-CENTRES.

27	Teynampet	104, Mount Road ...	88158	...	10— 3—48
28	T. Nagar	3, Sivagnanam Rd. ...	...	...	10— 3—48
29	Ayanavaram	7, Guruvappa Maistry St....	2788	...	28—10—48
30	Kodambakam	68, Arcot Rd ...	88469	...	5— 1—49

CRECHES.

1	Broadway	Bunder Rama Naicken Garden.	4614	...	...
2	Royapuram	Child Welfare Centre ...	2146	...	...
3	Chetpet	Child Welfare Centre ...	8166	...	...

S. No.	Dn. No.	Name of burial ground	Location
1	1	Kasimode Burial and Burning Ground	Suryanarayana Chetty Street. Royapuram
2	6	Melpattadai Ponnappa Mudali Street Burial and Burning Ground	Melpattadai Ponnappa Mudali Street, Perambur.
3	6	Manali Road Burial and Burning Ground.	Manali Road, Vyasarpady.
4	7	Washermenpet Burial and Burning Ground	Kathiwakkam, High Road Washermenpet.
5	17	Choolai Cremation Ground	Basin Road, Pulianthope.
6	20-A	Thangal Burial and Burning Gr.	Thangal, Sembiam.
7	20-A	Peravallur Burial and Burning Gr.	Peravallur, Sembiam.
8	20-B	Agaram Burial and Burning Ground	Loco Works Road, Sembiam.
9	21	Vailangadu Burial & Burning Ground.	Iyanavaram
10	22-B	Halls Road Burial and Burning Ground.	Halls Road, Kilpauk
11	23	Otteri Burial and Burning Ground	Brick kiln Road, Otteri.
12	34	Sterling Road Burial and Burning Ground.	Sterling Road, Chetpet.
13	35-A	Puliyur Burial and Burning Ground	Puliyur Cheri, Kodambakkam
14	35-A	Saligramam Burial and Burning Ground	Near Saligramam Cheri Kodombakkam.
15	35-A	Kodambakkam Burial and Burning Ground Near A. V. M Studios.	Kodmbakkam.
16	35-A	Nallankuppam Burial and Burning Ground	West Mambalam.
17	35-B	Aminjikarai Burial and Burning Ground	Lime Kiln Street, Aminjikarai
18	35-B	Arumbakkam Burial and Burning Ground	Aminjikarai
19	35-B	Naduvankrai Burial and Burning Ground	do
20	35-B	Mullam Burial and Burning Ground	do
21	35-B	Periagudal Burial and Burning Ground	do
22	43	Krishnaipet Burial and Burning Ground	Gajapathy Lala Street Dr. Besant Road.
23	44	Mylapore Burial and Burning Ground	South of Edward Elliots Road.
24	47-A	Thyagaraya Nagar Burial and Burning Ground	Kannammampet.
25	48-B	Saidapet Burial and Burning Ground	Jones Road, Saidapet
26	49	Kottur Burial and Burning Ground	Kottur, Guindy.
27	49	Zamin Adyar Burial and Burning Ground	Adyar
28	49	Kallikundram Burial and Burning Ground	do
29	49	Valacheri Burial and Burning Ground	do
30	50-B	Urur Burial and Burning Ground	Urur Village, Adyar,
31	1	Muslim Burial Ground.	Surianarayana Chetty Street.
32	"	" Bhora Burial Ground	do
33	"	" Old Burial Ground	do
34	"	" Khoja Burial Ground	Thandavaraya Giamany St.
35	22-A	Kilpauk B. G.	Shenoy Nagar.
36	1	Chistian Cemetry	Surianaraya Chetty Street.
37	22-A	Kilpauk Cemetry	Shenoy Nagar.
38	50	Ellapatha Mada Coil Cemrtey	St. Mary's Rd Mylapore
39	1	Chinese Burial Ground	Surianarayana Chetty St.
40	"	Jewish Burial Ground	do
41	22-A	Buddist Burial Ground	Shenoy Nagar

VITAL STATISTICS

STATEMENT NO. I

Meteorological data of Madras (Meenambakkam) for 1952

Latitude 13°4 North

Longitude 80°15 East

Months	Mean Barometric pressure corrected for temperature and reduced to standard gravity and mean sea level in Milli bars Hours I.S.T. 08.30 17.30			Temperature (°F)							Humidity (%)		Wind		Rainfall in inches		No. of rainy days 0.10" and over	
	Mean Maximum °F	Mean Minimum °F	Mean Daily Range col- mns 4—5	Mean Daily tem- pera- ture ½ of col- mns 4 + 5	Mean Dew point Hours I.S.T. 08.30 17.30		Mean Maxi- mum Solar Radi- ation Temp.	Difference- between mean temperature and Dewpoint temperature at hours I.S.T. 08.30 17.30 col 7-8 col 7-9		Percentage of Humidity Hours I.S.T. 08.30 17.30		Meandirection of wind in degrees 08.30 17.30		Total fall for the month in inches	Hea- viest rain- fall in 24 hrs in inches			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
January	1016.1	1012.9	84.1	69.5	14.6	76.8	68.0	67.0	149.9	8.8	9.8	81	66	N12W	N 54 E	0.22	0.11	1
February	1013.5	1010.5	86.9	71.0	15.9	78.9	69.3	68.3	153.6	9.6	10.6	79	64	N36W	N 72 E	0.57	0.43	1
March	1011.7	1007.9	91.0	74.3	16.7	82.7	71.2	70.5	156.1	11.5	12.2	73	63	S 69W	S 55 E	0	0	0
April	1011.0	1006.7	95.0	80.1	14.9	87.5	75.2	76.1	162.9	12.3	11.4	70	68	S 23W	S 42 E	0	0	0
May	1005.9	1002.3	97.3	81.0	16.3	89.1	73.5	75.8	152.6	15.6	13.3	66	67	S 49W	S 20 E	15.33	7.51	3
June	1006.0	1002.3	98.8	81.7	17.1	90.3	71.0	74.8	157.2	19.3	15.5	60	65	S 84W	S 39 E	1.41	0.70	4
July	1006.0	1002.5	96.2	80.6	15.6	88.4	71.1	71.2	155.3	17.3	17.2	63	55	S 84W	S 74 W	0.93	0.35	3
August	1006.5	1002.8	94.6	77.9	16.7	86.3	71.6	72.5	151.6	14.7	13.8	70	63	S 84W	S 17 E	4.72	1.53	10
September	1008.7	1004.7	95.1	78.9	16.2	87.0	72.9	74.5	158.0	14.1	12.5	69	65	S 66W	S 51 E	0.84	0.41	3
October	1009.3	1006.0	89.8	75.5	14.3	82.7	74.2	73.5	149.1	8.5	9.2	80	72	N88W	N 79 E	4.85	1.68	6
November	1012.6	1009.4	87.3	71.5	15.8	79.4	71.0	70.7	153.2	8.4	8.7	78	70	N36W	N 45 E	2.11	1.43	2
December	1016.5	1013.6	82.6	71.4	11.2	77.6	71.9	69.6	144.6	5.1	7.4	86	74	N 9W	N 53 E	11.23	3.86	6
Total	12123.8	12081.6	1098.7	913.4	185.3	1006.1	860.9	864.5	1844.1	145.2	151.6	875	792	...	...	42.21	17.96	39
Means	1010.3	1006.8	91.6	76.1	15.4	83.8	71.7	72.0	153.7	12.1	12.6	73	66	...	...	3.52	1.5	3

Births registered in each Division during 1952

Division No.	Name of Division	Population according to the census of 1951.			Number of Births Registered			Ratio of Births per 1000 of Population			Number of Males born to every 100 females born	Excess of Births over deaths per 1000 of Population	Excess of deaths over Births per 1000 of population	Number of still Births registered
		Males	Females	Total	Males	Females	Total	Males	Females	Total				
1	New Washermenpet	15,543	15,826	31,369	835	834	1,669	53.7	52.7	53.2	100.1	18.9	..	35
2	Royapuram	10,117	10,734	20,851	528	514	1,042	52.2	47.9	50.0	102.7	17.1	..	23
3	Singara Garden	24,594	18,002	43,196	1,469	1,330	2,799	59.7	71.5	64.8	110.5	29.7	..	85
4	Sanjeeviroyanpet	26,660	24,718	51,378	1,244	1,247	2,491	46.7	50.4	48.5	99.8	13.0	..	57
5	Korukupet	16,456	20,150	36,606	1,121	1,066	2,187	68.1	52.9	60.5	105.2	0.5	..	59
6	Vyasarpany	12,641	12,147	24,788	627	563	1,190	49.6	46.4	48.0	111.4	17.4	..	21
7	Basin Bridge	11,472	11,272	22,744	469	439	908	40.9	38.9	39.9	106.8	2.8	..	28
8	Peddunaickenpet	16,011	15,001	31,012	488	466	954	30.5	31.1	30.8	104.7	5.6	..	21
9	Seven Wells	14,994	11,990	26,984	492	510	1,002	32.8	42.6	37.7	96.5	...	1.7	14
10	Ammen Coil	12,636	10,954	23,590	402	408	810	31.8	37.3	34.5	98.5	4.7	..	21
11	Muthialpet	12,894	13,297	26,191	519	495	1,014	40.3	37.2	38.8	104.8	14.6	..	24
12	Harbour	8,950	7,021	15,971	349	323	672	39.0	46.0	42.1	108.0	7.5	..	20
13	Kachaleeswaran Koil	7,832	4,961	12,793	252	236	488	32.2	47.6	39.9	106.8	6.5	..	12
14	Kothawal Bazaar	8,771	6,346	15,117	257	262	519	29.3	41.3	35.3	98.1	4.9	..	16
15	Sowcarpet	8,782	6,489	15,271	234	207	441	26.7	32.0	29.3	113.0	7.2	..	18
16	Trevelyan Basin	15,124	14,072	29,196	556	516	1,072	36.7	35.2	35.9	107.8	9.5	..	21
17	Choolai	27,226	25,751	52,977	1,179	1,221	2,400	43.3	47.4	45.4	96.6	16.0	..	53
18	Puliantope	23,000	21,194	44,194	1,183	1,077	2,260	51.4	50.8	51.1	109.9	14.3	..	42
19	Perambur Barracks	14,843	14,662	29,505	644	637	1,281	43.4	43.5	43.4	101.1	19.5	..	18
20	Sembium	14,608	15,677	30,285	827	730	1,557	56.6	46.6	51.6	113.3	21.5	..	27
21	Aynavaram	14,464	14,354	28,818	702	659	1,361	48.5	46.0	47.2	106.5	10.3	..	46

APPENDIX

22 Kilpauk	...	12,629	10,287	22,916	51.	467	985	41.0	45.4	43.2	110.9	18.0	...	22
23 Purasawalkam	...	16,738	14,008	30,746	542	583	1,125	33.0	41.6	37.3	93.0	13.0	...	33
24 Kosapet	...	20,227	19,407	39,634	891	882	1,773	44.1	45.5	44.8	101.0	13.6	...	31
25 Vepery	...	8,298	9,136	17,434	334	327	661	40.3	35.8	38.0	102.1	18.4	...	17
26 Periamet	...	16,728	14,835	31,563	615	611	1,226	36.8	41.2	39.0	100.7	11.1	...	41
27 Edapalayam	...	10,124	8,358	18,482	286	321	607	28.3	38.4	33.4	90.0	8.4	...	14
28 Park Town	...	9,160	7,075	16,235	254	240	494	27.7	34.0	30.9	106.0	...	47.2	13
29 Napier Park	...	10,682	8,876	19,558	446	359	805	41.8	40.5	41.1	124.2	15.2	...	15
30 Chintadripet	...	13,688	12,809	26,497	582	573	1,155	42.6	44.8	43.7	101.6	16.6	...	27
31 Komaleeswaranpet	...	14,814	13,126	27,940	703	639	1,342	47.5	48.7	48.1	110.0	21.7	...	30
32 Egmore	...	8,385	8,319	16,704	914	761	1,675	109.0	91.6	100.3	120.0	72.6	...	144
33 Thousand Lights	...	15,997	15,345	31,342	766	740	1,506	47.9	48.2	48.0	103.5	19.9	...	27
34 Nungambakkam	...	14,739	12,668	27,407	561	513	1,074	38.0	40.5	39.2	109.4	14.0	...	28
35 Kodambakkam	...	19,226	17,908	37,134	927	784	1,711	48.2	43.8	46.0	118.2	14.6	...	39
36 Theagaraya Nagar(North)	...	10,886	10,487	21,373	455	421	876	41.8	40.1	40.9	108.1	16.0	...	38
37 Royapettah	...	11,901	11,443	23,344	444	403	847	37.3	35.2	36.3	110.2	10.2	...	18
38 Pudupakkam	...	14,448	14,224	28,672	594	538	1,182	41.1	41.3	41.2	101.0	8.6	...	30
39 Thriveteeswaranpet	...	15,878	14,485	30,363	735	671	1,406	46.3	46.3	46.3	109.5	17.2	...	42
40 Chepauk	...	12,818	11,449	24,267	704	623	1,327	54.9	54.4	54.7	113.0	25.8	...	52
41 Triplicane	...	14,537	12,240	26,777	582	536	1,118	40.0	43.8	42.9	108.6	17.1	...	33
42 Zam Bazaar	...	13,295	11,749	25,044	516	458	974	38.8	39.0	38.9	112.7	12.6	...	17
43 Mirsaibpet	...	23,307	20,873	44,180	1178	1108	2,286	50.5	53.1	51.8	106.3	10.5	...	59
44 Mylapore (North)	...	17,383	21,351	38,734	874	785	1,659	50.3	36.8	43.6	111.3	16.7	...	30
45 Mylapore (South)	...	13,137	12,608	25,745	409	395	804	31.1	31.3	31.2	103.5	11.7	...	16
46 Teynampet	...	17,741	15,736	33,477	710	696	1,406	40.0	44.2	42.1	102.0	13.2	...	38
47 Theagaraya Nagar (South)	...	18,630	16,762	35,392	791	756	1,547	42.5	45.1	43.8	104.6	16.7	...	31
48 Saidapet	...	18,093	16,373	34,466	720	703	1,423	39.8	42.3	41.2	102.4	16.2	...	36
49 Guindy	...	9,604	7,812	17,416	316	284	600	32.9	36.4	34.7	111.3	14.8	...	10
50 Adyar	...	14,550	13,548	28,098	590	620	1,210	40.5	45.8	43.2	95.2	17.7	...	20
Fort St. George	...	1,752	528	2,280	...	...	...	...	...	...	...	...	...	...
Total	...	7,37,013	6,79,043	14,16,056	32,334	30,587	62,921	43.87	45.05	44.43	105.7	13.9	...	1612

VITAL STATISTICS

STATEMENT No. III

Births registered in the Divisions during each month in 1952

4

APPENDIX

Division Number	Name of Division	January	February	March	April	May	June	July	August	September	October	November	December	Total number of Births registered
1	New Washermenpet	92	97	122	130	125	105	140	164	171	195	142	186	1,669
2	Royapuram	62	64	64	63	81	64	114	122	88	122	89	109	1,042
3	Singara Garden	131	165	149	202	208	134	327	330	299	287	247	320	2,799
4	Sanjeevirayanpet	139	156	158	182	226	177	190	195	265	276	235	292	2,491
5	Korukupet	143	136	145	150	179	146	201	185	220	248	207	227	2,187
6	Vyasarpady	85	75	77	91	88	90	92	92	133	126	121	120	1,190
7	Basin Bridge	48	50	59	75	56	50	83	84	79	103	108	113	908
8	Peidu Naickenpet	60	53	60	75	86	72	72	61	77	122	96	120	954
9	Seven Wells	62	66	85	71	85	76	66	87	75	104	115	110	1,002
10	Ammen Coil	51	46	51	44	70	63	74	80	75	92	83	81	810
11	Muthialpet	52	63	69	86	74	77	66	99	84	128	99	117	1,014
12	Harbour	45	39	31	52	54	43	51	66	72	72	77	70	672
13	Kachaleeswarar Koil	29	30	33	36	36	18	40	46	47	67	39	67	488
14	Kothawal Bazaar	39	28	38	44	40	31	39	43	30	68	55	64	519
15	Sowcarpet	33	21	29	32	30	22	35	35	62	58	40	44	441
16	Trevelyan Basin	65	59	60	77	83	68	91	101	90	155	93	130	1,072
17	Choolai	151	129	120	190	175	168	214	216	251	256	252	278	2,400
18	Pulianthope	115	143	140	175	180	160	186	214	197	246	212	292	2,260
19	Perambur Barracks	94	76	79	77	100	75	138	104	115	142	121	160	1,281
20	Sembiam	106	108	109	118	125	120	112	143	160	166	124	166	1,557
21	Aynavaram	70	88	89	120	100	115	111	125	132	132	108	171	1,361

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22	Kilpauk	...	60	55	43	61	85	71	75	92	124	88	139	985
23	Purasawalkam	...	56	69	75	83	87	90	130	109	111	103	121	1,125
24	Kosapet	...	95	104	124	140	131	139	183	172	183	184	187	1,773
25	Vepery	...	44	39	37	53	52	64	48	62	74	53	71	661
26	Periamet	...	76	71	78	86	105	92	105	106	135	120	141	1,226
27	Edapalayam	...	23	38	41	41	48	46	58	65	69	67	61	607
28	Park Town	...	40	31	23	31	35	30	46	38	65	52	59	494
29	Napier Park	...	42	45	53	61	80	58	81	79	89	76	79	805
30	Chintadripet	...	60	77	93	73	98	92	101	116	130	110	120	1,155
31	Komaleeswaranpet	...	72	82	78	119	104	104	115	121	129	142	150	1,342
32	Egmore	...	111	66	89	112	139	104	185	140	200	165	194	1,675
33	Thousand Lights	...	57	100	84	120	121	107	144	128	180	151	177	1,506
34	Nunganbakkam	...	49	80	59	62	114	81	100	95	100	103	123	1,074
35	Kodambakkam	...	100	101	86	141	128	107	140	183	201	177	187	1,711
36	Theagaroya Nagar (North)	...	43	51	56	64	80	50	69	84	101	86	95	876
37	Royapettah	...	43	49	65	71	60	54	81	71	110	90	91	847
38	Pudupakkam	...	52	73	65	95	92	64	104	112	161	135	121	1,182
39	Thiruvateeswaranpet	...	76	94	93	114	103	101	136	120	142	160	152	1,406
40	Chepauk	...	60	86	101	104	105	67	145	115	140	114	160	1,327
41	Triplicane	...	61	97	74	61	92	70	117	99	141	94	122	1,118
42	Zam Bazaar	...	47	66	79	82	77	64	75	86	116	107	99	974
43	Mirsaibpet	...	154	135	142	168	155	141	165	140	169	201	573	2,286
44	Mylapore (North)	...	119	105	117	106	124	102	93	88	128	180	380	1,659
45	Mylapore (South)	...	51	38	48	75	67	51	71	72	70	75	105	804
46	Teynampet	...	82	94	92	83	117	96	123	129	169	143	158	1,406
47	Theagaroya Nagar (South)	...	81	86	86	94	113	98	121	176	185	158	179	1,547
48	Saidapet	...	80	89	76	116	121	108	123	129	151	138	162	1,423
49	Guindy	...	36	28	43	33	38	37	40	60	64	87	79	600
50	Adyar	...	67	65	73	93	98	78	87	121	151	132	159	1,210
Total		...	3,609	3,806	3,940	4,632	4,970	4,232	5,459	5,830	6,953	6,154	7,681	62,921

Deaths and Infantile deaths Registered in each Division during 1952.

Division No	Name of Division	Area in square Miles	Area in Acres.	Density per acre	Population according to the census of 1951		Number of Deaths Registered			Ratio of Deaths per 1000 of population			Number of Deaths of males to every 100 Female deaths	Number of Infantile deaths registered				
					Males.	Females.	Total.	Males	Females	Total	Males	Females		Total	Males	Females	Total	Infantile death rate
1	New Washermpet	2.6158	1674.1120	18.7	15,543	15,826	31,369	575	501	1,076	37.0	31.7	34.3	114.8	133	106	239	143.2
2	Royapuram	0.4444	284.4160	73.3	10,117	10,734	20,851	343	343	686	33.9	32.0	32.9	100.0	97	68	165	158.1
3	Singara Garden	0.4430	283.5200	152.4	24,594	18,602	43,196	736	781	1,517	30.0	41.5	35.1	94.2	197	185	380	135.8
4	Sanjeeviroyanpet	0.5249	335.9360	152.9	26,660	24,718	51,378	922	905	1,827	34.6	36.7	35.6	101.8	247	196	443	178.0
5	Korukupet	1.111	711.2320	51.5	16,456	20,150	36,606	1,050	1,118	2,168	63.8	55.5	59.7	94.0	266	248	514	235.0
6	Vyasarpady	1.9180	1227.5200	20.2	12,641	12,147	24,788	397	361	758	31.4	29.7	30.6	110.0	98	79	177	150.0
7	Basin Bridge	0.3155	201.9200	101.3	11,472	11,272	22,744	433	413	846	37.8	36.7	37.3	104.8	89	84	173	190.5
8	Peddu Naickenpet	0.1393	89.1520	347.8	16,011	15,001	31,012	401	378	779	25.0	25.2	25.1	106.1	102	84	186	195.0
9	Seven Wells	0.1491	95.4240	282.8	14,990	11,990	26,984	580	465	1,045	38.7	38.8	38.8	124.7	90	87	177	176.6
10	Ammen Coil	0.1051	67.2640	350.7	12,636	10,954	23,590	359	340	699	28.4	31.0	29.7	105.6	84	89	173	213.6
11	Muthialpet	0.1437	91.9680	284.8	12,894	13,297	26,190	341	291	632	26.5	22.0	24.1	116.2	94	74	168	165.7
12	Harbour	0.5346	342.1440	46.7	8,950	7,021	15,971	304	248	552	34.0	35.3	34.6	122.6	84	76	160	238.1
13	Kachaleeswarar Koil	0.5244	335.6160	38.1	7,832	4,961	12,793	219	186	405	28.0	37.5	32.7	118.0	55	37	92	188.5
14	Kothawal Bazaar	0.1250	80.0000	188.9	8,771	6,346	15,117	234	211	445	26.7	33.2	29.4	110.9	66	47	113	217.7
15	Sowcarpet	0.1039	66.4960	230.0	8,782	6,489	15,271	169	162	331	19.2	25.0	21.7	104.3	36	30	66	149.7
16	Trevelyan Basin	0.1533	98.1120	297.6	15,124	14,072	29,196	421	375	796	27.8	26.7	27.3	112.3	97	82	179	167.0
17	Choolai	0.3600	230.4000	230.0	27,226	25,751	52,977	747	805	1,552	27.4	31.2	29.3	92.8	194	202	396	165.0
18	Puliantope	0.8840	565.7600	78.1	23,000	21,194	44,194	791	839	1,630	31.4	39.6	37.0	94.3	197	190	387	171.2
19	Perambur Barracks	0.9050	579.2000	51.0	14,843	14,662	29,505	344	362	706	23.2	24.7	23.9	95.0	82	86	168	131.1
20	Sembium	2.0127	1288.1280	23.5	14,608	15,677	30,285	464	443	907	31.5	28.2	30.0	104.8	137	108	245	157.4
21	Aynavaram	2.6100	1670.4000	17.7	14,464	14,354	28,818	623	440	1,063	43.1	30.7	36.9	141.6	112	96	208	152.7

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22 Kilpauk	...	2.8542	1826.6880	12.6	12,629	10,287	22,916	283	291	574	22.4	28.3	25.3	97.3	87	64	151	153.3
23 Pursawalkam	...	0.4353	278.5920	110.4	16,738	14,008	30,746	371	356	727	22.2	25.4	23.8	104.2	83	80	163	145.0
24 Kosapet	...	0.2800	179.2060	221.2	20,227	19,407	39,634	622	611	1,233	30.7	31.5	31.1	101.8	162	133	295	166.4
25 Vepery	...	0.4310	275.8400	63.2	8,298	9,136	17,434	177	163	340	21.3	17.8	19.6	109.0	51	35	86	130.1
26 Periamet	...	0.5667	362.6880	87.0	16,728	14,835	31,563	426	448	874	25.5	30.2	27.8	95.1	92	93	185	150.9
27 Edapalayam	...	0.1090	69.7600	265.0	10,124	8,358	18,482	213	238	451	21.0	28.5	24.7	90.0	63	53	116	191.1
28 Park Town	...	0.3401	217.6640	74.6	9,160	7,075	16,235	810	451	1,261	88.4	63.7	77.1	181.8	65	66	131	265.2
29 Napier Park	...	0.3001	192.0640	101.8	10,682	8,876	19,558	254	254	508	23.8	28.7	25.3	100.0	69	58	127	157.8
30 Chintadripet	...	0.1384	88.5760	299.1	13,688	12,809	26,497	358	357	715	26.2	27.9	27.1	100.3	88	79	167	144.6
31 Komaleeswaranpet	...	0.3181	203.5840	137.2	14,814	13,126	27,940	373	362	735	25.2	27.6	26.4	103.0	112	85	197	146.8
32 Egmore	...	0.7729	494.6560	33.8	8,365	8,319	19,704	206	257	463	24.6	30.0	23.6	80.5	96	66	162	96.7
33 Thousand Lights	...	1.3495	863.6800	36.3	15,997	15,345	31,342	480	402	882	30.0	26.2	28.1	119.4	114	98	212	140.8
34 Nungambakkam	...	1.3821	884.5440	31.0	14,739	12,668	27,407	357	336	693	21.2	26.5	25.3	106.3	95	70	165	153.7
35 Kodambakkam	...	4.2000	2688.0000	13.8	19,226	17,908	37,134	601	569	1,170	31.3	31.8	31.5	105.6	161	142	303	177.1
36 Theagaraya Nagar(North)	...	1.0360	663.0400	32.2	10,886	10,487	21,373	265	272	537	24.4	26.0	25.1	97.4	77	72	149	170.1
37 Royapettah	...	0.5100	345.6000	67.5	11,901	11,443	23,344	303	307	610	25.5	26.8	26.1	98.7	80	63	143	168.8
38 Pudupakkam	...	0.2238	143.2320	200.2	14,448	14,224	28,672	479	456	935	33.1	32.8	32.9	105.0	104	95	199	18.4
39 Thiruvateesvaranpet	...	1.0499	671.9360	45.2	15,878	14,485	30,363	464	420	884	29.2	29.1	29.1	110.5	124	102	226	160.7
40 Chepauk	...	0.2997	191.8080	126.5	12,818	11,449	24,267	358	342	700	28.0	30.0	29.0	104.7	112	95	207	156.0
41 Triplicane	...	0.1760	112.6400	237.7	14,537	12,240	26,777	342	317	659	23.5	25.9	24.7	108.0	92	85	177	158.3
42 Zam Bazaar	...	0.1391	89.0240	281.3	13,295	11,749	25,044	348	309	657	26.2	26.3	26.2	112.6	82	89	171	175.6
43 Mirsaibpet	...	0.7000	448.0000	98.6	23,307	20,873	44,180	951	871	1,822	41.0	41.7	41.3	109.2	252	205	457	199.9
44 Mylapore (North)	...	0.7485	47.0400	81.0	17,383	21,351	38,734	518	496	1,014	29.6	23.2	26.4	104.4	124	127	251	151.3
45 Mylapore (South)	...	0.1299	275.1360	93.6	13,137	12,608	25,745	260	242	502	19.8	19.2	19.5	107.4	58	59	117	145.5
46 Teynampet	...	1.3310	851.8400	39.3	17,741	15,736	33,477	460	505	965	26.0	32.1	29.0	91.1	116	141	257	182.8
47 Theagaraya Nagar (South)	...	1.2320	788.4800	45.0	18,630	16,762	35,392	492	467	959	26.4	28.0	27.2	105.4	133	119	252	162.9
48 Saidapet	...	2.2020	1109.2800	24.5	18,093	16,373	34,466	416	447	863	23.0	27.3	25.2	93.7	107	82	189	132.8
49 Guindy	...	5.3240	3407.3600	5.1	9,604	7,812	17,416	176	166	342	18.4	21.2	19.8	106.0	45	36	81	135.0
50 Adyar	...	4.6080	2949.1200	9.6	14,550	13,548	28,098	342	370	712	23.5	27.3	25.4	92.4	79	84	163	134.7
Total	...	49.8453	31900.9920	46.7	7,37,013	6,79,043	14,16,056	22,158	21,049	43,20	30.06	30.99	30.51	105.27	5,480	4,828	10,308	163.82

VITAL STATISTICS

STATEMENT No. V

"Deaths" Registered in each Division during each month in 1952.

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Division No.	Name of Division.	January	February	March	April	May	June	July	August	September	October	November	December	Total Number of Deaths Registered.
1	New Washermenpet	88	115	65	117	70	72	68	81	79	81	89	151	1,076
2	Royapuram	53	54	51	64	60	54	47	70	49	45	55	84	686
3	Singara Garden	149	118	90	102	99	104	117	133	117	133	118	237	1,517
4	Sanjivirayanpet	132	145	127	125	119	161	176	139	123	149	140	291	1,827
5	Korukupet	202	172	160	133	170	145	209	180	140	157	182	320	2,168
6	Vyasarpady	83	85	39	45	46	61	69	75	54	47	67	87	758
7	Basin Bridge	67	55	50	77	51	71	63	89	67	67	88	101	846
8	Peddu Naickenpet	62	78	53	61	63	65	65	70	56	65	66	75	779
9	Seven Wells	73	83	69	83	81	107	82	85	70	96	88	128	1,045
10	Ammen Coil	72	69	56	55	47	49	48	55	49	58	46	95	699
11	Muthialpet	63	60	55	44	42	49	58	51	45	60	41	66	632
12	Harbour	48	31	35	37	49	37	47	36	51	58	49	74	552
13	Kachaleeswaran Koil	22	25	31	26	32	20	33	26	28	40	44	78	405
14	Kothawal Bazaar	47	41	36	30	34	29	40	29	25	29	30	75	445
15	Sowcarpet	31	22	29	22	19	22	34	27	32	23	27	43	331
16	Trivelyan Basin	60	66	66	64	58	61	63	69	57	57	87	88	796
17	Choolai	140	131	104	106	106	94	160	135	112	151	123	190	1,552
18	Puliantope	147	136	115	98	110	100	152	155	136	113	161	267	1,630
19	Perambur Barracks	62	68	48	45	56	51	64	54	56	62	52	88	706
20	Sembium	73	76	77	72	69	65	95	76	68	69	65	102	907

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21	Aynavaram	116	94	89	72	81	72	107	74	78	89	72	119	1 063
22	Kilpauk	48	51	59	46	26	38	62	51	33	38	41	81	574
23	Purasawalkam	78	56	55	48	47	58	78	68	46	54	65	74	727
24	Kosaret	123	103	94	83	90	77	109	112	99	103	100	140	1 233
25	Vepery	22	23	22	31	23	34	33	30	35	32	27	28	340
26	Periamet	52	66	68	64	73	72	85	67	80	65	74	108	874
27	Edapalayam	44	38	48	25	29	37	34	37	32	30	40	57	451
28	Park Town	87	121	94	73	99	118	120	102	85	126	87	149	1 261
29	Napier Park	45	37	45	32	42	43	43	46	28	48	44	55	508
30	Chintadripet	52	71	53	49	62	61	56	52	55	55	63	86	715
31	Komaleeswranpet	61	54	52	54	53	54	55	70	54	77	77	74	735
32	Egmore	27	29	32	22	48	41	54	42	36	43	45	44	468
33	Thousand Lights	63	84	78	61	66	70	70	77	72	68	70	103	882
34	Nungambakkam	75	63	60	52	53	42	63	56	48	53	46	82	693
35	Kodambakam	85	113	110	104	79	88	108	96	77	99	90	121	1 170
36	Theagaraya Nagar (North)	51	43	37	41	25	35	55	46	37	52	49	66	537
37	Royapettah	52	59	39	39	35	53	59	57	43	48	52	74	610
38	Pudupakkam	83	68	68	73	75	72	76	72	80	74	75	119	935
39	Tiruvateesvaranpet	87	79	76	71	62	62	76	82	61	69	74	85	884
40	Chepauk	48	63	50	58	56	46	74	69	41	69	61	65	700
41	Triplicane	50	52	56	49	49	31	70	59	63	56	42	82	659
42	Zam Bazaar	49	43	49	52	60	46	58	51	53	60	68	68	657
43	Mirsaibpet	120	131	146	157	136	150	153	139	129	156	160	245	1 822
44	Mylapore (North)	83	95	89	72	95	77	87	59	71	67	91	128	1 014
45	Mylapore (South)	42	45	56	44	48	45	42	41	27	35	35	42	502
46	Teynampet	101	84	86	54	68	68	92	70	65	64	71	142	965
47	Theayagaraya Nagar (South)	77	96	80	72	78	69	84	86	71	64	79	103	959
48	Saidapet	74	80	72	69	80	57	83	61	48	62	78	99	863
49	Guindy	35	25	24	24	26	26	39	25	20	33	26	39	342
50	Adyar	63	65	65	56	71	48	68	47	38	60	56	75	712
Total		3,667	3,661	3,306	3,153	3,216	3,205	3,883	3,579	3,119	3,509	3,576	5,333	43,207

Deaths Registered according to ages in Divisions in 1952.

Division No.	Name of Division	Under one year of age		One year and under Five years		Five years and under Ten years		Ten years and under Fifteen years		Fifteen years and under Twenty years		Twenty years and under Thirty years		Thirty years and under Forty years		Forty years and under Fifty years		Fifty years and under Sixty years		Sixty years and above		Total		Total of Males and Females		
		Males		Females		Males		Females		Males		Females		Males		Females		Males		Females		Males			Females	
		Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females			
1	New Washermenpet	133	106	156	144	42	36	11	14	7	5	36	38	35	37	29	17	43	32	83	72	575	501	1076		
2	Royapuram	97	68	90	94	12	30	9	7	8	11	26	18	16	19	25	16	20	24	40	56	343	343	686		
3	Singara Garden	197	183	192	248	45	46	13	13	10	24	55	72	45	38	53	27	35	33	91	97	736	781	1517		
4	Sanjeeviroyanpet	247	196	266	245	50	56	15	11	13	16	45	71	42	73	68	43	48	48	128	146	922	905	1827		
5	Korukupet	266	248	314	327	61	66	23	19	18	30	57	88	60	80	67	55	62	61	122	144	1050	1118	2168		
6	Vyasarpady	98	79	118	117	33	14	7	9	9	9	12	22	17	19	24	14	24	17	55	61	397	361	758		
7	Basin Bridge	89	84	123	112	18	25	14	6	8	7	26	29	23	35	30	33	42	29	60	53	433	413	846		
8	Peddu Naickenpet	102	84	79	90	14	13	9	7	7	12	11	25	20	18	30	24	34	25	95	80	401	378	779		
9	Seven Wells	90	87	95	83	21	28	13	15	16	18	48	43	59	38	73	34	67	23	98	96	580	465	1045		
10	Ammen Coil	84	89	76	70	13	17	4	8	11	8	22	27	24	13	21	28	39	19	65	61	359	340	699		
11	Muthialpet	94	74	75	72	18	17	7	4	3	5	22	19	21	18	21	14	31	18	49	50	341	291	632		
12	Harbour	84	76	67	61	24	18	9	3	...	7	22	21	28	16	19	12	20	11	31	23	304	248	552		
13	Kachaleeswarar Koil	55	37	55	40	9	10	4	5	8	1	13	20	8	10	12	11	18	10	37	42	219	186	405		
14	Kothawal Bazaar	66	47	43	49	6	11	5	6	3	6	18	18	19	17	18	11	26	10	30	36	234	211	445		
15	Sowcarpet	36	30	30	27	8	7	2	3	4	4	9	15	10	12	19	16	9	12	42	36	169	162	331		
16	Trevelyan Basin	97	82	83	86	13	15	10	6	5	13	21	36	22	23	35	22	38	26	97	66	421	375	796		
17	Choolai	194	202	212	218	31	41	9	14	11	14	25	66	31	49	37	27	68	37	129	137	747	805	1552		
18	Puliantope	197	190	253	266	25	30	11	15	12	17	51	76	49	54	52	37	61	48	80	106	791	839	1630		
19	Perambur Barracks	82	86	101	114	20	20	6	2	3	7	25	39	15	23	24	13	22	13	46	54	344	362	706		
20	Sembium	137	108	103	116	18	19	8	4	6	13	28	31	27	26	27	24	42	17	68	85	464	443	907		
21	Aynavaram	112	96	119	88	9	12	11	2	14	10	47	42	72	26	78	33	75	44	86	77	623	440	1063		

APPENDIX

APPENDIX

22 Kilpauk	...	87	64	59	78	11	14	2	6	2	8	27	22	21	16	17	22	12	35	59	283	291	574
23 Purasawalkam	...	83	80	108	108	17	17	4	11	2	7	21	26	19	17	21	29	22	67	52	371	356	727
24 Kosapet	...	162	133	172	187	27	20	10	9	9	19	27	47	28	40	31	55	37	101	96	622	611	1233
25 Vepery	...	51	35	44	33	8	6	2	2	4	6	11	12	12	9	8	12	10	25	39	177	163	340
26 Periamet	...	92	93	92	121	9	17	5	6	7	15	19	38	36	21	38	36	28	92	87	426	448	874
27 Edapalayam	...	63	53	36	55	4	13	5	3	2	3	13	20	11	16	18	18	12	43	50	213	238	451
28 Park Town	...	65	66	77	80	37	21	27	21	23	24	119	56	144	50	141	88	35	89	56	810	451	1261
29 Napier Park	...	69	58	47	56	5	7	4	5	5	4	20	26	10	11	18	24	16	52	64	254	254	508
30 Chintadripet	...	88	79	83	104	12	13	9	5	3	13	20	30	21	25	34	29	17	59	58	358	357	715
31 Komaleeswaranpet	...	112	85	93	98	7	11	7	5	4	8	22	27	20	24	23	26	24	59	59	373	362	735
32 Egmore	...	96	66	31	36	2	8	1	4	7	12	11	42	11	38	11	15	9	21	25	206	257	463
33 Thousand Lights	...	114	98	149	128	22	22	5	4	3	11	26	22	24	24	30	27	20	80	58	480	402	882
34 Nungambakkam	...	95	70	96	94	12	10	3	2	3	11	18	23	17	22	18	20	16	75	72	357	336	693
35 Kodambakkam	...	161	142	173	147	28	38	21	15	10	6	30	45	23	23	37	39	30	79	101	601	569	1170
36 Theagaraya Nagar (North)	...	77	72	72	81	14	15	4	4	4	3	11	17	13	17	7	22	13	41	41	265	272	537
37 Royapettah	...	80	63	61	79	9	14	5	6	5	8	24	14	14	21	22	27	22	51	54	303	307	610
38 Pudupakkam	...	104	95	109	100	13	18	9	10	13	13	38	41	31	28	46	42	25	74	102	479	456	935
39 Thriveteeswaranpet	...	124	102	99	109	16	18	3	3	4	14	38	30	38	23	38	31	23	73	81	464	420	884
40 Chepauk	...	112	95	64	62	5	10	4	5	4	7	21	34	18	30	31	38	21	61	54	358	342	700
41 Triplicane	...	92	85	79	85	10	16	3	5	7	3	14	18	23	16	23	28	14	63	58	342	317	659
42 Zam Bazaar	...	82	89	81	78	13	8	4	3	10	6	19	15	20	15	19	22	17	78	59	348	309	657
43 Mirsaibpet	...	252	205	238	282	45	42	16	14	14	19	68	61	56	44	61	78	45	123	118	951	871	1822
44 Mylapore (North)	...	124	127	127	136	35	24	11	9	10	11	26	26	27	24	28	34	29	96	81	518	496	1014
45 Mylapore (South)	...	58	59	63	70	16	15	...	7	...	3	13	14	11	8	21	25	16	53	43	260	242	502
46 Teynampet	...	116	141	142	146	22	28	5	10	8	5	27	33	15	19	20	33	20	72	79	460	505	965
47 Theagaraya Nagar (South)	...	133	119	130	137	29	33	9	11	7	8	22	28	28	24	24	34	17	76	62	492	467	959
48 Saidapet	...	107	82	106	126	21	23	5	15	4	14	20	44	26	27	27	30	21	70	73	416	447	863
49 Guindy	...	45	36	45	51	6	9	4	6	2	1	9	12	15	12	9	15	5	26	29	176	166	342
50 Adyar	...	79	84	92	110	19	30	8	8	5	2	21	19	14	16	25	26	24	53	58	342	370	712
Total	...	5,480	4,828	5,418	5,644	964	1,061	395	389	357	501	1,379	1,649	1,389	1,304	1,608	1,749	1,157	3,419	3,447	22,158	21,049	43,207

Deaths from Principal causes registered in the Divisions in 1952

APPENDIX

Division No.	Name of Division	Plague	Cholera	Small Pox	Measles	Enteric Fever	Malaria	Other Fevers	Dysentery	Diarrhoea	Tubercle including Tubercle of Lungs	General Respiratory Diseases	Injuries	Maternal Deaths	All Other Causes	Total deaths registered
1	New Washermenpet	...	22*	5*	1	*1	...	178	85	106	6	292	11	3	346	1,076
2	Royapuram	...	17	1	1	2	...	110	63	47	6	176	12	...	256	686
3	Singara Garden	...	10	2	1	3	...	212	119	122	11	377	17	11	595	1,517
4	Sanjeeviroyanpet	...	12	17	...	21	...	234	184	126	10	348	25	8	861	1,827
5	Korukupet	...	11	6	...	14	...	305	232	177	13	434	18	3	937	2,168
6	Vyasarpady	...	27	9	...	10	3	...	...	...	...	...	...	...	...	...
7	Basin Bridge	...	2	1	...	4	...	83	65	43	8	166	9	5	372	758
8	Peddunaickenpet	...	1	4	...	3	2	141	69	82	14	220	6	1	303	846
9	Seven Wells	...	2	3	...	5	3	119	35	69	19	162	10	4	348	779
10	Ammen Coil	...	3	2	...	*11	5	122	56	85	45	178	28	4	501	1,045
11	Muthialpet	...	4	2	1	4	4	117	37	65	10	151	6	4	294	699
12	Harbour	...	...	6	...	11	2	68	40	41	19	151	5	...	289	632
13	Kachaleeswarar Koil	...	2	9	...	4	2	67	67	41	5	150	3	...	202	552
14	Kothawal Bazaar	...	1	...	...	3	1	38	53	26	5	97	1	...	180	405
15	Sowcarpet	...	3	...	...	4	2	60	25	45	4	114	2	...	186	445
16	Trivelyan Basin	...	1	2	...	6	4	44	12	18	6	63	7	...	168	331
17	Choolai	...	6	5	...	4	2	82	43	41	13	214	12	4	370	796
18	Puliantope	...	6	1	...	12	3	69	130	135	33	339	15	6	803	1,552
19	Perambur Barracks	...	1	2	1	4	2	100	178	104	17	338	11	5	867	1,650
20	Sembium	...	...	1	1	1	...	39	73	47	5	157	5	...	377	706
21	Aynavaram	...	...	...	...	3	...	38	56	64	7	231	11	2	495	907
		...	...	4	...	*2	1	54	74	32	45	197	21	2	625	1,063

APPENDIX

No.	Name of the place	Population	Deaths	Ratio of Deaths per 1000 of Estimated Population
22	Kilpauk	169	27	159
23	Purasawalkam	210	49	233
24	Kosapet	344	90	261
25	Vepery	74	24	324
26	Periamet	243	46	274
27	Edapalayam	103	29	244
28	Park Town	139	61	1,261
29	Napier Park	113	9	508
30	Chintadripet	202	25	715
31	Komaleeswaranpet	187	62	735
32	Egmore	64	23	463
33	Thousand Lights	189	81	882
34	Nungambakkam	142	44	693
35	Kodambakkam	247	85	1,170
36	Theagaraya Nagar (North)	148	21	537
37	Royapettah	183	38	610
38	Pudupakkam	291	47	935
39	Thriveteeswaranpet	295	56	884
40	Chepauk	197	41	700
41	Triplicane	145	31	659
42	Zam Bazaar	187	23	657
43	Mirsaibpet	488	59	1,822
44	Mylapore (North)	232	17	1,014
45	Mylapore (South)	113	9	502
46	Teynampet	267	24	965
47	Theagaraya Nagar (South)	227	58	959
48	Saidapet	179	25	863
49	Guindy	31	34	342
50	Adyar	173	11	712
	Total	10,137	2,665	43,207
	Ratio of Deaths per 1000 of Estimated Population	6.81	1.79	29.03

APPENDIX

Month	1952						1951					
	Total Number of Births registered	Birth Rate	Total Number of Deaths registered	Death Rate	Total Number of Infantile Deaths registered	Infantile Death Rate	Total Number of Births registered	Birth Rate	Total Number of Deaths registered	Death Rate	Total Number of Infantile Deaths registered	Infantile Death Rate
January	3,609	29.10	3,667	29.57	803	222.50	3,090	26.12	2,779	23.55	606	156.11
February	3,806	30.70	3,661	29.52	823	216.24	3,338	28.29	2,850	24.15	703	210.60
March	3,940	31.79	3,306	26.70	665	168.80	3,671	31.19	3,096	26.24	691	188.23
April	4,632	37.62	3,153	25.42	757	163.43	4,132	35.02	2,930	24.83	684	165.54
May	4,970	40.80	3,216	25.90	760	152.92	4,717	39.98	3,642	30.86	845	179.14
June	4,232	34.13	3,205	25.84	829	195.89	5,321	45.09	3,621	30.70	783	147.20
July	5,459	43.80	3,883	31.31	962	176.22	5,126	43.45	3,331	28.23	788	153.73
August	5,655	45.60	3,579	28.86	851	150.50	5,944	50.37	3,728	31.60	937	157.64
September	5,830	47.01	3,119	25.30	724	124.20	5,571	47.21	3,793	32.20	887	159.22
October	6,953	56.07	3,509	28.30	853	122.70	5,761	48.82	3,900	33.05	887	154.00
November	6,154	48.90	3,576	28.84	956	155.35	6,298	53.37	3,860	32.71	924	146.71
December	7,681	61.94	5,333	43.00	1,325	172.50	5,992	50.77	4,509	38.21	1,086	181.25
Total	62,921	42.28	43,207	29.03	10,308	163.82	58,961	41.11	42,039	29.31	9,821	166.57

STATEMENT No. IX.

951.

15

Infantile Deaths among Principal communities during 1952

APPENDIX

Community.	Under seven days		Seven days and under one month		One month and under six months		Six months and under one year		Total		Total of Males and Females
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
European	...	...	...	...	...	...	...	...	...	...	...
Anglo-Indian	3	1	...	...	14	5	8	6	25	12	37
Indian Christian	42	34	27	24	81	49	61	66	211	173	384
Muslim	87	75	73	46	239	223	183	186	582	530	1,112
Hindu	1,134	868	680	544	1,495	1,375	1,353	1,326	4,662	4,113	8,775
Others	...	...	...	...	...	...	...	...	...	...	...
Total	1,266	978	780	614	1,829	1,652	1,605	1,584	5,480	4,828	10,308

VITAL STATISTICS

Statement No. XI

Ratio of Infantile Deaths registered from Principal causes in 1952

Age periods	Cholera		Small-pox		Diphtheria		Malaria		Fevers		Dysentery		Diarrhoea		Preme-ture birth, debility, etc.		Nervous system		Respiratory Diseases		All other causes		Total Infantile Deaths	
	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio
Under Seven days.	...	...	...	...	...	...	...	...	10	0.45	2	0.08	22	0.98	1,757	78.30	69	3.07	168	7.49	216	9.63	2244	21.77
Seven days and under one month	...	...	...	...	...	...	...	...	11	0.80	4	0.30	70	5.00	1,051	75.40	60	4.30	108	7.75	90	6.45	1,394	13.52
One month and under six months	1	0.03	13	0.37	5	0.14	...	...	154	4.42	129	3.71	425	12.21	606	17.41	274	7.87	1,257	36.11	617	17.73	3 481	33.77
Six months and under one year.	1	0.03	12	0.37	18	0.56	2	0.06	171	5.36	254	7.97	516	16.18	100	3.14	112	3.51	1,539	48.26	64	14.55	3,189	30.94
Total ...	2	0.02	25	0.24	23	0.22	2	0.02	346	3.36	3 89	3.77	1,033	10.02	3,514	34.09	515	5.00	3,072	29.80	1,387	13.46	10,308	100.00

APPENDIX

Infantile Deaths from Principal causes by months during 1952

APPENDIX

Month	Cholera	Smallpox	Diphtheria	Malaria	Other fevers	Dysentery	Diarrhoea	Premature birth, debility etc	Nervous system	Respiratory Diseases	All other causes	Total Infantile Deaths			Total Infantile Deaths in 1951
												Males	Females	Total	
January	...	2	2	...	30	33	70	246	53	272	95	408	395	803	606
February	...	5	2	...	25	25	69	281	42	236	138	442	381	823	703
March	...	3	1	...	28	24	52	191	42	207	117	334	331	665	691
April	1	2	2	...	27	19	65	221	40	262	118	388	369	757	684
May	...	2	3	1	22	22	88	228	47	233	114	385	375	760	845
June	...	2	1	...	42	29	104	233	40	332	46	428	401	829	783
July	...	6	5	...	26	40	131	285	43	270	156	518	444	962	788
August	...	1	1	1	30	40	106	284	35	229	124	452	399	851	937
September	...	...	1	...	23	23	86	286	29	219	57	591	333	724	887
October	...	1	1	...	15	24	63	386	48	227	88	487	366	853	887
November	...	...	2	...	35	48	89	368	44	226	144	538	418	956	924
December	1	1	2	...	43	62	110	505	52	359	190	709	616	1,325	1,086
Total	2	25	23	2	346	389	1,033	3,514	515	3,072	1,387	5,480	4,828	10,308	9,821

Deaths from Principal Causes with rates during 1952 compared with the previous five years.

Year.	Plague.		Cholera.		Small-pox.		Measles.		Enteric Fever.		Malaria.		Other Fevers.		Dysentery.		Diarrhoea.		Tubercle including Respiratory diseases.		General Injuries.		Maternal Deaths.		All other causes.		Total Deaths.			
	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.		
1947	1	0.001	20	0.002	20	0.02	...	...	163	0.17	55	0.06	2,862	2.96	2,048	2.11	1,799	1.85	502	0.52	6,803	7.03	396	0.41	159	0.16	15,169	15.67	29,979	30.96
1948	...	...	210	0.21	12	0.01	...	...	143	0.15	40	0.04	2,657	2.70	1,472	1.50	1,640	1.67	621	0.63	7,237	7.36	343	0.35	142	0.14	16,485	16.77	31,002	31.54
1949	...	...	48	0.05	181	0.18	...	...	192	0.19	37	0.04	2,192	2.19	1,674	1.68	1,546	1.55	700	0.70	8,072	8.09	291	0.29	130	0.13	17,576	17.62	32,639	32.71
1950	...	...	214	0.21	945	0.93	...	...	230	0.23	102	0.10	2,644	2.61	2,226	2.20	2,109	2.08	813	0.80	8,918	8.80	325	0.32	113	0.11	20,087	19.83	38,726	38.23
1951	...	...	216	0.15	490	0.34	2	0.001	256	0.18	91	0.06	3,504	2.44	3,461	2.41	2,234	1.56	898	0.63	9,933	6.93	443	0.31	151	0.10	20,362	14.20	42,039	29.31
Mean of the previous five years.			138	0.12	330	0.30	...	...	197	0.18	65	0.06	2,772	2.58	2,176	1.98	1,866	1.74	707	0.66	8,193	7.64	360	0.34	139	0.13	17,936	16.82	34,877	32.55
1952	...	...	182	0.12	127	0.09	6	0.004	276	0.19	75	0.05	3,823	2.57	3,949	2.65	2,665	1.79	627	0.42	10,137	6.81	536	0.36	155	0.10	20,649	13.88	43,207	29.03

VITAL STATISTICS

Births, Deaths, Infantile Deaths and deaths registered from Principal causes with rates in 1952

STATEMENT No. XIV

Year	Births		Deaths		Still Births		Infantile Deaths		Plague		Cholera		Small-pox		Measles		Typhoid		Malaria		Other Fevers		Dysentery		Diarrhoea		Tubercle including Lungs		General Respiratory Diseases		Injuries		Maternal Deaths		All other causes	
	Births excluding still births	Birth Rate	Deaths excluding still births	Death Rate	Still Births	Rate	Infantile Deaths	Infantile Death Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	
1942	20,644	25.97	18,019	22.67	840	40.70	4,062	196.76	...	...	970	12	180.02	...	...	1600	20	2820	0.35	1,341	1.69	1,347	1.70	904	1.14	301	0.38	4,093	5.15	2090	0.26	154	7.46	9,113	11.47
1943	29,498	36.51	30,366	37.59	1,071	36.31	7,295	247.30	10,001	5370	66	160.02	40	0.05	1160	14	67	0.08	2,345	2.90	2,245	2.78	1,276	1.53	398	0.49	7,857	9.73	2760	0.34	276	9.32	14,953	18.51		
1944	26,056	31.74	29,705	36.19	1,062	40.76	7,407	284.27	...	...	530	07	144	0.18	10,001	860	11	82	0.10	2,687	3.27	2,213	2.70	1,285	1.56	290	0.35	7,166	8.73	2020	0.25	178	6.33	15,313	18.66
1945	0,549	36.63	27,277	32.71	1,107	36.24	6,532	213.82	...	...	300	04	233	0.28	20,002	1260	15	46	0.06	2,562	3.55	1,832	2.20	1,165	1.40	410	0.49	6,009	7.21	3130	0.39	155	5.07	13,987	16.77
1946	41,874	43.91	27,381	28.71	1,505	35.94	7,663	183.00	...	...	10,001	184	0.19	...	...	1070	11	45	0.05	2,746	3.88	1,627	1.71	1,383	1.45	405	0.42	5,878	6.16	2910	0.31	140	3.56	14,565	15.27
1947	40,753	42.08	29,979	30.36	1,408	34.60	7,987	195.99	10,001	2000	21	200.02	200	0.02	1630	17	55	0.06	2,862	2.96	2,048	2.11	1,799	1.86	502	0.52	6,803	7.03	3960	0.41	159	2.90	15,169	15.67
1948	50,222	51.09	31,002	31.54	1,549	30.84	7,833	155.97	2100	21	120	0.01	1430	15	40	0.04	2,657	2.70	1,472	1.50	1,640	1.67	621	0.63	7,237	7.36	3430	0.35	142	2.83	16,485	16.77
1949	52,362	52.48	32,639	32.71	1,733	33.10	8304	158.59	480	05	181	0.18	1920	19	37	0.04	2,192	2.20	1,674	1.63	1,546	1.55	700	0.70	8,072	8.03	2910	0.29	130	2.48	17,576	17.62
1950	52,619	51.94	38,726	33.23	1,449	27.50	9,878	187.73	2140	21	945	0.93	2300	23	1020	0.10	2,644	2.61	2,226	2.20	2,109	2.03	813	0.80	8,918	8.80	3250	0.32	113	2.15	20,087	19.83
1951	58,961	41.11	42,039	29.31	1,634	27.71	9,821	166.57	...	...	2160	15	490	0.34	20,001	2560	18	91	0.05	3,504	2.44	3,461	2.41	2,234	1.56	898	0.63	9,933	6.93	4430	0.31	151	2.50	20,362	14.20
1952	62,921	42.28	43,207	29.03	1,612	25.62	10,308	163.82	...	...	1820	12	1270	0.09	60,004	2760	19	75	0.05	3,823	2.57	3,949	2.65	2,665	1.79	627	0.42	10,137	6.81	5360	0.36	155	2.46	20,649	13.83

VACCINATION.

Vaccinations performed during each month in 1952.

STATEMENT No. 1

Month	Primary Vaccination						Re-vaccination					
	Number of Persons Vaccinated				Results		Number of persons Vaccinated				Results	
	Males	Females	Total	Success-ful	Fail-ure	Absent	Males	Females	Total	Success-ful	Failure	Absent
January	2,117	2,139	4,256	4,256	...	...	8,397	8,207	16,604	754	12,477	3,373
February	2,845	2,809	5,654	5,640	2	12	16,780	15,874	32,654	1,902	23,617	7,135
March	2,611	2,578	5,197	5,193	...	4	13,727	14,570	28,297	1,200	23,688	6,409
April	2,149	2,127	4,276	4,270	1	5	11,649	10,190	21,839	1,006	16,570	4,263
May	20,26	1,896	3,922	3,909	1	12	9,283	7,943	17,226	651	12,481	4,094
June	2,079	2,091	4,170	4,160	2	8	7,996	8,031	16,027	601	11,711	3,715
July	2,154	2,197	4,351	4,340	5	6	10,014	9,847	19,861	876	15,432	3,553
August	2,166	2,066	4,232	4,215	6	11	11,713	10,521	22,234	1,070	16,666	4,498
September	2,140	1,969	4,109	4,104	3	2	9,780	9,067	18,847	643	14,214	3,990
October	2,144	2,030	4,174	4,174	...	...	8,511	8,401	16,912	638	13,163	3,111
November	2,093	2,051	4,144	4,140	4	...	6,803	6,638	13,441	533	10,328	2,580
December	2,123	1,910	4,033	4,032	...	1	7,047	6,962	14,009	813	10,737	2,459
	26,655	25,863	52,518	52,433	24	61	1,21,700	1,16,251	2,37,951	10,687	1,78,084	49,180

22 Kilpauk	...	22,916	2,668	2,294	4,962	423	438	861	710	123	16	1	850	11	2,245	1,856	4,101	166	3,475	460	100.0	4.6
23 Purasawalkam	...	30,746	1,560	1,587	3,147	480	442	922	767	136	11	...	914	7	1,080	1,145	2,225	52	1,613	560	99.9	3.1
24 Kosapet	...	39,634	3,100	2,103	5,203	689	668	1,357	1,213	124	20	...	1,357	...	2,411	1,435	3,846	78	2,703	1,065	100.0	2.8
25 Vepery	...	17,424	1,176	1,789	2,965	320	295	615	519	87	8	...	614	1	856	1,494	2,350	86	2,065	199	100.0	4.0
26 Periamet	...	31,563	2,970	2,489	5,459	572	572	1,144	999	125	20	...	1,144	...	2,398	1,917	4,315	234	3,088	993	100.0	7.0
27 Edapalayam	...	18,482	1,904	1,757	3,661	348	313	661	502	151	8	...	661	...	1,556	1,444	3,000	128	2,229	643	100.0	6.0
28 Park Town	...	16,235	1,749	1,954	3,703	275	259	534	421	108	5	...	534	...	1,474	1,695	3,169	133	2,271	765	100.0	5.6
29 Napier Park	...	19,558	2,887	2,127	5,014	439	387	826	696	122	8	...	826	...	2,448	1,740	4,188	208	3,300	680	100.0	5.9
30 Chintadripet	...	26,497	2,297	1,873	4,170	455	459	914	782	127	5	...	914	...	1,842	1,414	3,256	195	2,060	1,001	100.0	8.7
31 Komaleeswaranpet	...	27,940	2,936	2,463	5,399	467	478	945	798	141	6	...	945	...	2,469	1,985	4,454	275	2,747	1,432	100.0	9.1
32 Egmore	...	16,704	2,230	2,718	4,948	286	312	598	433	159	5	1	598	...	1,944	2,406	4,350	183	3,281	886	100.0	5.3
33 Thousand Lights	...	31,342	2,740	3,028	5,768	571	533	1,104	970	131	3	...	1,104	...	2,169	2,495	4,664	118	2,385	2,161	100.0	4.7
34 Nungambakkam	...	27,407	2,187	2,099	4,286	495	431	926	758	150	8	...	926	...	1,692	1,668	3,360	24	2,294	1,042	100.0	1.0
35 Kodambakkam	...	37,134	4,732	4,681	9,413	801	788	1,589	1,254	290	42	3	1,589	...	3,931	3,893	7,824	408	340	1,076	100.0	6.0
36 Theagaraya Nagar(North)	...	21,073	1,780	2,034	3,814	369	356	725	600	117	8	...	725	...	1,411	1,678	3,089	281	2,630	178	100.0	9.7
37 Royapettah	...	23,344	1,899	1,875	3,774	378	401	779	603	168	8	...	779	...	1,521	1,474	2,995	52	2,240	703	100.0	2.3
38 Pudupakkam	...	28,672	2,874	3,032	5,906	513	483	996	769	215	12	...	996	...	2,361	2,549	4,910	170	3,827	913	100.0	4.3
39 Thiruwateeswaranpet	...	30,363	3,496	3,489	6,985	544	520	1,064	868	181	15	...	1,064	...	2,952	2,969	5,921	149	4,566	1,206	100.0	3.2
40 Chepauk	...	24,267	2,758	2,672	5,430	387	434	821	652	155	11	3	821	...	2,371	2,238	4,609	88	5,538	983	100.0	2.4
41 Triplicane	...	26,777	1,981	1,697	3,678	435	453	888	719	155	14	...	888	...	1,546	1,244	2,790	73	2,337	380	100.0	3.0
42 Zam Bazaar	...	25,044	2,053	1,635	3,688	471	457	928	786	122	19	1	928	...	1,582	1,178	2,760	65	2,326	369	100.0	2.8
43 Mirsaibpet	...	44,180	3,101	3,112	6,213	828	729	1,557	1,296	243	18	...	1,557	...	2,273	2,383	4,656	117	4,118	421	100.0	2.8
44 Mylapore (North)	...	38,734	2,062	2,158	4,220	602	612	1,214	1,033	174	6	1	1,214	...	1,460	1,546	3,066	120	2,490	396	100.0	4.6
45 Mylapore (South)	...	25,745	1,490	1,968	3,458	392	398	790	601	168	21	...	790	...	1,098	1,570	2,668	108	2,141	419	100.0	4.9
46 Teynampet	...	33,477	3,079	3,035	6,114	664	662	1,326	1,064	252	8	1	1,325	...	2,415	2,373	4,788	337	3,830	621	100.0	8.1
47 Theagaraya Nagar (South)	...	35,392	4,891	4,913	9,804	832	766	1,598	1,239	340	19	...	1,598	...	4,059	4,147	8,206	771	5,910	1,525	99.9	11.5
48 Saidapet	...	34,466	3,560	3,391	6,951	709	722	1,431	1,062	341	27	1	1,431	...	2,851	2,669	5,520	377	4,029	1,114	100.0	8.6
49 Guindy	...	17,416	1,803	1,766	3,569	277	292	569	479	88	2	...	569	...	1,526	1,474	3,000	143	2,236	621	100.0	6.0
50 Adyar	...	28,038	2,850	2,984	5,834	543	506	1,049	801	244	4	...	1,049	...	2,307	2,478	4,785	208	3,951	626	100.0	5.0
Total	...	14,16,056	1,48,355	1,42,114	2,90,469	26,655	25,863	52,518	42,666	9,143	597	27	52,433	61	1,21,700	1,16,251	2,37,951	10,687	178,084	49,180	99.9	5.7

MEDICAL RELIEF

STATEMENT No. I

Cases treated in Corporation Dispensaries in 1952

Serial No.	Division No.	Year of opening	Dispensary	Attendance		New Cases		Minor Operations	Remarks
				1951	1952	1951	1952		
1	1	1924	Royapuram ...	67,431	80,234	37,836	43,264	...	Allo-
2	2	1952	Palmyrah Kuppam ...	...	42,119	...	14,712	54	pathic
3	5	1913	Washermanpet ...	60,972	1,09,894	60,972	59,925	...	"
4	6	1929	Vyasarpady ..	74,074	76,855	37,194	39,294	17	"
5	6	1928	Perambur ...	79,975	95,115	52,435	59,75	36	"
6	8	1923	Mint ...	1,75,093	1,53,613	71,700	71,070	...	"
7	11	1929	Harbour ...	81,434	1,05,554	35,625	44,244	204	"
8	14	1923	Mafuzkhan ...	1,00,752	89,410	46,181	46,651	67	"
9	16	1919	Trevelayn Basin ...	62,265	61,257	31,867	30,829	...	"
10	17	1899	Baliah Naidu ...	73,899	78,078	41,510	43,619	...	"
11	20	1946	Sembiam ...	95,116	82,160	53,536	47,855	...	"
12	21	1948	Ayanavaram ...	1,02,565	87,166	64,503	40,677	112	"
13	23	1919	Kilpauk ...	62,239	63,168	34,978	35,021	...	"
14	24	1929	Kosapet ...	45,440	91,829	40,640	50,533	32	"
15	29	1903	Chintadripet ...	86,618	99,971	44,298	50,706	12	"
16	32	1923	Egmore ...	59,489	69,096	31,709	35,931	...	"
17	34	1923	Nungambakkam ...	93,291	75,454	50,906	42,010	48	"
18	35	1948	Kodambakkam ...	73,579	46,048	15,583	24,936	426	"
19	37	1924	Pudupakkam ...	85,905	78,228	23,190	37,947	...	"
20	41	1918	Triplicane ...	93,992	1,23,997	48,008	64,108	397	"
21	43	1938	Krishnampet ...	89,981	1,11,208	42,594	56,683	12	"
22	45	1924	Mylapore ...	75,305	95,530	36,814	47,644	153	"
23	46	1927	Teynampet ...	90,093	94,315	45,699	49,634	142	"
24	47	1922	Theagarayanagar. ...	1,46,942	1,46,286	65,013	70,448	80	"
25	50	1948	Adyar ...	52,389	66,682	23,990	31,861	147	"
26	33	1930	Thousand Lights ...	93,825	1,01,781	48,785	48,446	...	Ayur- vedic
27	13	1938	Mannady ...	80,283	87,547	25,110	22,150	62	Unani
28	18	1930	Pulianthope ...	77,265	85,051	39,798	40,884	250	"
29	31	1939	Pudupet ...	67,891	78,648	31,221	36,324	...	"
30	39	1932	Tiruvateeswaran- pet ...	83,897	92,381	37,446	40,905	...	"
31	3	1945	Royapuram ...	57,557	59,461	34,606	34,449	...	Siddha
32	17	1931	Choolai ...	1,48,532	1,53,404	64,726	66,839	30	"
33	19	1931	Otteri ...	80,491	85,140	45,581	50,075	30	"

Cases of Skin Diseases and Leprosy cases treated in the Corporation Skin and Leprosy Clinics and General Dispensaries during 1952

H-7

Name of the Institution	Date of opening	Details of Anti-Leprosy work											Skin cases		Yearly attendance New and old Skin and Leprosy cases	Average Monthly Attendance
		New cases of Leprosy	Types		Results of Treatment						Number of injections performed for Leprosy					
					Infective	Non-infective	Number cured	Number improved	Number symptoms-free	Number arrested		Number otherwise				
1. Skin and Leprosy clinic, Dr. Beasant Road ...	2-2-1934	746	114	632	...	284	32	38	392	7,602	7,627	1,504	23,719	1,977		
2. Leprosy clinic Vyasarpady ...	4-8-1931	1218	258	960	...	171	5	132	910	18,201	1,968	424	28,137	2,345		
3. General Dispensaries ...	...	15	...	15	...	...	...	...	...	...	84,957	50	1,38,310	11,526

Results of Survey of cases of Leprosy from 1-1-52 to 31-12-52

Division No.

Area Surveyed	Population						Cases of Leprosy Detected										Gross Incidence per 1,000 of population examined	Child incidence per 1,000 population examined	Sex incidence Male	Sex incidence Female	Sex rate male case per 100 cases of leprosy	Child rate per 100 cases of leprosy	Open case rate per 100 cases of leprosy	Suspicious cases for observation						
	Enumerated			Examined			Infective				Non-infective																			
	Males	Females	Children	Total	Males	Females	Children	Total	Males	Females	Children	Total	Male Children	Female Children	Total															
43	Block A	...	3543	3481	1792	1753	10569	2258	3058	1567	1641	8524	9	7	2	...	18	24	44	27	28	123	16.5	17.8	16.2	16.8	44.0	40.4	12.8	14
43	" B	...	4649	4451	2363	2358	13821	2698	3711	2065	2118	10592	14	9	1	...	24	66	70	59	51	246	25.5	26.5	29.4	22.3	51.9	41.1	8.9	22
	Total	...	8192	7932	4155	4111	24390	4956	6769	3632	3759	19116	23	16	3	...	42	90	114	86	79	369	21.5	22.7	23.5	19.9	49.2	40.9	10.2	36
Vyasarpady Leprosy clinic																														
20	Block A	...	2489	2517	1329	1367	7702	1081	2409	1245	1335	6070	6	5	1	...	12	34	56	58	46	194	33.93	40.6	42.7	25.3	48.00	50.9	5.8	17
20	" B	...	5315	5435	3294	3135	17179	2039	4861	2836	2870	12606	26	17	5	1	49	57	78	63	93	291	26.9	28.4	30.9	24.4	44.4	47.6	14.4	46
	Total	...	7804	7952	1623	1502	24881	3120	7270	4081	4205	18676	32	22	6	1	61	91	134	121	139	485	23.8	32.2	34.7	25.8	45.7	48.8	11.1	63

N. B. Details of survey for each street is available at the clinics

MEDICAL RELIEF

STATEMENT No. IV

Details of cases treated in the Infectious Diseases Hospital, Tondiarpet, during 1952

Patients in the Hospital on 1-1-52	Cholera	Small-pox	Chicken-pox	Measles	Typhoid	Diphtheria	Gastro-Enteritis Chronic Enteritis Dysentery, etc;	Mumps	Whooping cough	Other causes	Contacts	Total
Patients admitted during the year												
City	47	19	8	5	...	...	...	...	1	12	15	107
Mofiusil	973	629	1,069	467	...	1	1,489	40	6	123	958	5,755
	168	64	42	16	1	...	165	8	...	28	...	492
Total number of patients treated during 1952	1,188	712	1,119	488	1	1	1,654	48	7	163	973	6,354
Number of patients discharged ...	788	580	1,103	482	1	1	1,269	48	7	121	942	5,342
No. Died	180	115	...	...	...	...	355	...	...	36	...	686
Mortality Rate per cent	15	16	...	...	...	...	21	...	...	22	...	11
Patients remaining in the Hospital on 31-12-52	220	17	16	6	...	...	30	...	...	6	31	326

APPENDIX

No.	Defects	Boys						Girls						Remarks		
		Entrants			Regulars			Entrants			Regulars				Total of entrants & regulars	
		Percentage			Percentage			Percentage			Percentage				Defective No.	Percentage
		No.			No.			No.			No.					
		1952—53	1951—52	Defective	1952—53	1951—52	Defective	1952—53	1951—52	Defective	1952—53	1951—52	Defective		1952—53	1951—52	Defective	Percentage
1	Malnutrition	1838	16.65	19.64	595	14.41	2433	14.07	959	12.97	12.00	786	14.01	17.39	1745	13.42
2	Dirty head, body and nails	561	5.08	7.07	248	7.06	809	4.68	114	1.54	1.28	61	1.09	1.12	175	1.35
3	Teeth and mouth	1481	13.42	13.72	517	9.36	1998	11.56	592	8.01	3.45	238	4.24	3.71	830	6.38
4	Nose and throat	521	4.72	6.98	210	4.88	731	4.23	532	7.20	5.49	628	11.20	10.06	1160	8.92
5	Eye diseases	232	2.10	4.26	88	2.36	320	1.85	179	2.42	2.37	176	3.14	2.26	355	2.73
6	Vision	6	0.05	0.15	7	0.07	13	0.08	14	0.19	0.03	5	0.03	0.10	19	0.15
7	Ear diseases	86	0.78	0.53	45	0.14	131	0.76	70	0.95	0.85	42	0.75	0.79	112	0.86
8	Hearing	2	0.02	0.03	1	0.03	3	0.02	1	0.01	...	...	...	...	1	0.01
9	Speech	2	0.02	0.04	...	0.06	2	0.01	...	...	...	...	...	0.03	...	...
10	Circulatory system	52	0.47	1.11	22	0.40	74	0.43	134	1.81	1.13	120	2.14	1.48	254	1.95
11	Tuberculosis	5	0.05	...	...	0.04	5	0.03	...	...	...	...	...	...	...	...
12	Respiratory system	27	0.24	0.59	4	0.48	31	0.18	49	0.66	0.56	25	0.45	0.63	74	0.57
13	Abdominal organs	31	0.28	0.37	8	0.62	39	0.23	7	0.09	0.08	4	0.07	0.09	11	0.08
14	Bones and joints	604	5.47	6.91	97	5.12	701	4.06	57	0.77	1.08	58	1.03	0.78	115	0.88
15	Nervous & psychic systems	8	0.07	0.04	2	0.03	10	0.06	7	0.09	0.07	3	0.05	0.04	10	0.08
16	Infectious & Contagious diseases	398	3.61	7.42	167	4.96	565	3.27	458	6.19	5.6	280	4.99	8.12	738	5.68
17	Other diseases and defects	200	1.81	2.33	77	1.89	277	1.60	121	1.64	1.46	109	1.94	1.51	230	1.77
18	Vaccination	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	Deformities	19	0.17	0.23	9	0.18	28	0.16	14	0.19	0.11	10	0.18	0.20	24	0.18

APPENDIX

29

MEDICAL INSPECTION

STATEMENT NO. I

Group	No. on Roll		Average daily attendance		No. examined		No. defective		Percentage	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Entrants	23,649	17,354	16,727	14,526	11,036	7,394	4,315	2,587	39.10	34.99
Regulars					6,251	5,609	1,962	2,018	31.39	35.98
Total	23,649	17,354	16,727	14,526	17,287	13,003	6,277	4,605	36.31	35.41

MEDICAL INSPECTION

Treatment Table

STATEMENT No. II

Group	No. treated at Schools	No. Sent to Corporation Dispensaries	No. referred to Government Hospitals	No. referred to Govt. Ophthalmic Hospital	No. referred to Tuberculosis Institute	No. of parents met	No. of revisits paid to Schools	No. of re-examinations of children
Boys	5,341	397	382	16	5	697	193	3,419
Girls	3,288	488	391	20	...	828	119	7,882
Total	8,629	885	773	36	5	1,525	312	11,301

MEDICAL INSPECTION

Height and Weight Tables

Statement No. III

Age	Average height in inches		Average weight in Pounds		Quinquennial average height in inches		Quinquennial average weight in pounds	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
4	...	34.84	...	22.53	...	...	...	...
5	40.96	38.24	33.79	29.59	39.39	39.01	31.15	30.40
6	40.68	40.02	33.20	31.85	40.83	40.75	33.08	32.50
7	41.75	42.04	34.71	34.07	42.68	42.38	36.77	34.85
8	44.40	43.90	38.82	36.86	44.83	44.93	39.37	37.03
9	45.63	46.05	42.20	40.34	46.81	45.95	43.33	40.31
10	47.15	48.13	44.45	43.69	48.66	48.12	46.04	43.55
11	49.03	49.50	47.74	47.65	49.64	50.55	50.25	48.28
12	50.89	52.51	51.28	52.16	51.28	52.52	52.33	52.77
13	52.33	53.87	53.66	58.84	52.90	54.85	55.46	58.93
14	55.51	56.78	56.07	68.50	54.83	56.90	55.50	67.10
15	55.41	58.60	61.68	75.37	56.25	58.65	66.09	74.75
16	59.11	59.65	67.11	86.91	...	...	...	...
17	59.89	60.96	79.16	81.31	...	...	...	...
18	60.44	59.51	82.28	92.60	...	...	...	...
19	59.00	62.50	90.00	86.20	...	...	...	...
20	60.00	63.50	95.00	96.50	...	...	...	...

SANITATION

STATEMENT No. I

Details of Sewers laid in 1952

S. No.	Area	Length of Sewers (in feet)
1	Vyasarpady ...	7,795
2	Sembiam ...	900
3	Purasawalkam ...	1,184
4	Kilpauk ...	390
5	Aminjikarai ...	3,747
6	Greame's Road ...	1,445
7	Ice House Road ...	1,476
8	North Mylapore ...	1,676
9	South Mylapore ...	76
10	Thyagarayanagar ...	1,750
11	Gandhinagar ...	4,158
Total ...		24,577

SANITATION

STATEMENT No. II

Disposal of applications for Licences in 1952

S. No.	Description of Trade	No. of cases dealt with	No. Sanctioned	No. refused	No. pending	Remarks
1	Aerated Water & Ice Factory	74	74	...	...
2	Bakery, Sweetmeat Stalls & Coffee Hotels...	623	608	10	5	
3	Candles & Soaps	27	24	2	1	
4	Cocconut Fibre, Hemp & Jute	28	28	...	...
5	Cattle Yards	1,695	1,584	76	35	
6	Bones, Hoofs, Hair & Wool	30	28	1	1	
7	Cart & Cycle Stands	46	46	...	...
8	Dairy Produce	417	414	...	3	
9	Flour	372	364	6	2	
10	Guiliding & Condiments	245	239	4	2	
11	Hack Stables	10	8	...	2	
12	Dyeing	149	137	8	4	
13	Onions & Garlic	130	130	...	...
14	Oil & Oil Mills	825	794	20	11	
15	Lodging Houses	124	118	2	4	
16	Markets	43	43	...	...
17	Meat	137	129	6	2	
18	Spirits, Turpentine, Chemicals & Rosins	394	387	...	7	
19	Laundries	568	542	20	6	
20	Fish & Fins	18	16	...	2	
21	Skin, Hides & Leather	246	240	3	3	
22	Paddy boiling	...	...	...	...
23	Sugar	...	...	...	...
24	Catgut, Offal & Tallow	5	4	...	1	
25	Snuff	217	213	2	2	
26	Cotton	116	116	...	...
27	Eating Houses	2 578	2,403	152	23	
28	Swine	...	...	...	...
29	Lime Kilns	75	62	10	3	
30	Beedi Manufacturing	349	328	5	16	
31	Manufacturing Cigars, Cigarettes & Storing Tobacco	377	343	14	20	
32	Camphor—Storing & Boiling	45	45	...	...
33	Shaving Saloon	1 738	1,724	9	5	
34	Husking of Paddy	...	...	...	...
35	Groundnut Storage	186	186	...	...
36	Grain Storage	694	694	...	...
37	Gold Refining	20	20	...	...
38	Poultry	25	25	...	...
Total		12,626	12,116	350	160	

APPENDIX

Nature of samples	1952		1947		1948		1949		1950		1951	
	Number of samples analysed	Number of adulterated samples	Number of samples analysed	Percentage of adulterated samples	Number of samples analysed	Percentage of adulterated samples	Number of samples analysed	Percentage of adulterated samples	Number of samples analysed	Percentage of adulterated samples	Number of samples analysed	Percentage of adulterated samples
Milk	2,810	2,036	1,840	64.5	2,054	50.8	2,629	62.2	2,880	72.0	2,837	76.0
Butter	470	184	223	18.8	356	18.8	481	21.8	475	24.8	467	30.4
Ghee	683	214	459	5.2	607	10.9	688	10.9	725	11.3	718	24.0
Gingelly Oil	362	70	374	8.3	450	11.6	409	13.4	313	12.4	320	12.2
Groundnut Oil	36	1	40	5.0	67	7.5	100	5.0	86	4.7	57	5.3
Cocoanut Oil	156	10	113	1.8	117	...	195	3.1	286	11.5	234	9.8
Coffee Powder	169	94	114	4.4	266	13.9	222	4.1	196	2.0	176	10.2
Tea	35	...	33	...	31	...	30	...	22	...	33	15.2
Ghee Substitutes	30	5	6	50.0	17	47.1	14	35.7	19	26.3	13	38.5
Other Articles	76	33	27	19.2	70	7.0	42	52.4	59	45.8	76	10.5
Total	4,827	2,647	3,229	40.3	4,035	31.8	4,810	39.9	5,061	47.2	4,931	52.2

Nature of samples	Adulterated samples among the samples analysed in 1952				Adulterated samples of the previous year pending disposal on 1-1-1952				Total number of adulterated samples dealt with during 1952				Total fines imposed in 1952	Average fine per conviction in 1952	Number of convictions in 1951	Total fines imposed in 1951	Average fine per conviction in 1951			
	Number of samples	Number of convictions	Number seized under Section 9 and for- feited or destroyed under Section 12	Number taken under Section 14, but acquitted, withdrawn or not prosecuted	Number pending disposal on 31-12-1952	Number of samples	Number of convictions	Number seized under Section 9 and for- feited or destroyed under Section 12	Number taken under Section 14 but acquitted, withdrawn or not prosecuted	Number pending disposal on 31-12-1952										
Milk	2,036	764	..	58	1,214	1,895	456	..	3	1,436	3,931	1,220	..	61	2,650	35,037	29	1,534	53,502	35
Butter	184	89	..	..	95	80	42	..	1	37	264	131	..	1	132	4,141	32	99	3,135	32
Ghee	214	77	..	1	136	103	43	..	3	57	317	120	..	4	193	5,950	50	106	3,960	37
Gingelly Oil	70	42	..	..	28	14	9	..	..	5	84	51	..	..	33	1,470	29	40	1,025	26
Groundnut Oil	1	..	..	..	1	2	2	..	..	..	3	2	..	..	1	105	53	2	55	28
Cocoanut Oil	10	7	..	1	2	13	8	..	..	5	23	15	..	1	7	530	35	21	500	24
Coffee Powder	94	46	..	3	45	10	5	..	..	5	104	51	..	3	50	2,042	40	6	155	26
Tea	..	..	..	..	..	3	3	..	..	..	3	3	..	..	..	75	25	1	35	35
Ghee Substitutes	5	3	..	..	2	3	1	..	1	1	8	4	..	1	3	107	27	2	65	33
Other Articles	33	7	..	2	24	3	2	..	1	..	36	9	..	3	24	300	33	6	215	36
Total	2,647	1,035	..	65	1,547	2,126	571	..	9	1,546	4,773	1,606	..	74	3,093	49,757	31	1,817	62,647	34

WATER ANALYSIS

TABLE No. I

Examination of Water Samples in 1952

Number	Description	Number of samples examined	Remarks
1	Complete bacteriological and chemical examination	2,486	...
2	Bacteriological and chemical examination of well water samples from emergency wells	1,073	...
3	Bacteriological and chemical examination of private well samples	165	...
4	Microscopical examination of water from different places in the Water Supply System	124	...
5	Identification of Algae	75	...
6	Culture media, etc. for determination and adjustment of P.H.	184	...
7	Examination of for the presence of H_2S in filtered water samples	1,609	...
Total		5,716	...

TABLE II

Monthly average levels in the three Reservoirs and the total monthly rainfall recorded in the respective catchments in 1952

Months	Red Hills Reservoir		Solavaram Reservoir		Sathyamurthy Sagar (Poondi Reservoir)	
	Average lake level in feet	Total rainfall recorded in the region (in inches)	Average lake level in feet	Total rainfall recorded in the region (in inches)	Average lake level in feet	Total rainfall recorded in the region (in inches)
January '52 ...	31.70	0.68	42.62	0.94	111.39	Nil
February '52 ...	30.73	0.34	46.68	0.42	108.04	0.97
March '52 ...	29.71	Nil	44.80	Nil	Nil	Nil
April '52 ...	28.30	Nil	42.88	Nil	Nil	Nil
May '52 ...	29.88	18.73	51.66	15.08	122.50	8.51
June '52 ...	38.19	2.19	49.22	1.35	116.20	1.65
July '52 ...	37.33	1.79	47.31	1.13	110.20	2.15
August '52 ...	36.27	1.77	46.65	1.01	109.72	3.97
September '52	35.23	2.52	46.68	2.76	110.80	2.09
October '52 ...	36.68	8.40	48.44	10.33	113.73	9.70
November '52.	38.35	5.40	48.43	4.13	114.90	4.54
December '52.	42.22	6.43	53.89	7.63	126.58	11.88
Average ...	34.55	48.25	47.44	44.78	95.34	45.46
		(Total)		(Total)		(Total)

TABLE III

Limnological conditions of the Sources of the City Water Supply— (a) Satyamurthy Sagar (Poondi Reservoir) in 1952
(Results expressed in parts per 100,000)

	31-1	Feb.	March	April	31-5	18-6	25-7	28-8	30-9	Oct.	15-11	29-12
A. Physical Condition												
Time	12-30PM				2-35PM	12-20PM	2 0PM	2-30PM	1-30PM		2-0PM	2-0PM
Depth(feet)	105.43				123.10	111.10	110.30	108.6	112.10		114.97	134.80
Colour & Transparency	Y&O				Y & O	Y & O	G.O	Y & O	Y & O		G Y & O	S Y & O
Temperature (°c)	...				34.0	35.0	33.0	...	33.0		29.0	27.0
B. Chemical Conditions												
Total Solids	44.0				12.4	62.8	78.0	40.2	24.0		52.8	40.0
Alkalinity to { Phenolphthalein	...				— 0.4	— 0.6	0.6	— 2.1	0.6		0.8	— 0.4
{ Methyl Orange	...				5.1	15.8	16.0	8.5	8.7		20.0	9.8
P H	...				7.6	8.2	8.6	8.2	8.4		8.6	7.6
Dissolved oxygen (cc/l)	7.7				4.27	6.0	5.7	11.9	6.2		...	6.3
% saturation	...				...	...	...	...	...		...	107.9
Chlorides	...				1.4	9.4	13.4	20.0	2.8		5.7	1.3
Oxygen Absorbed (Tidy's 4Hrs)	0.282				0.200	0.269	0.227	0.288	0.194		0.203	0.266
Ammoniacal Nitrogen	0.002				Trace	0.001	Nil	0.005	Nil		0.016	Nil
Albuminoid nitrogen	0.044				0.002	0.044	0.052	0.096	0.040		0.032	0.028
Nitrous Nitrogen	Trace				Nil	Nil	Nil	Nil	Nil		Nil	Nil
Nitric Nitrogen	Nil				Nil	Nil	Nil	Nil	Nil		Nil	Nil
Phosphates (Po ₄)	...				...	...	Nil	...	Nil		0.002	0.006
Silicates (SiO ₂)	...				...	...	1.3	...	1.1		1.7	1.2
Total hardness	...				5.0	14.0	14.2	11.0	6.4		13.0	6.4
C. Bacteriological Conditions	1.0				+5.0	+5.0	+1.0	+5.0c	+1.0		+1.0	+1.0
B. coli ? c. c.	...											

Samples were not collected

The Reservoir was dry

The Reservoir was dry

The Reservoir was dry

TABLE IV

Limnological Conditions of the Sources of the City Water Supply :—(b) At Tamarapakam Anicut in 1952

	29—3—52	25—4—52	31—5—52	18—6—52	25—7—52	25—8—52	29—12—52
A. Physical Conditions—							
Time	11-30 A.M.	1-30 A.M.	12 NOON	10-45 A.M.	12 NOON	12 NOON	11-30 A.M.
Depth in feet	...	...	...	...	...	...	...
Colour and Transparency	Y & O	Y & O	Y & O	W & O	G & O	Y & O	Sy. & H
Temperature (°C)	33.75	...	32.0	...	33.0	33.0	...
B. Chemical Conditions—							
Total Solids	28.0	...	21.2	40.8	36.8	33.8	...
Alkalinity to	...	1.7	— 0.4	— 0.7	1.2	0.6	— 0.2
Phenolphthalein	...	...	...	...	...	...	...
Methyl Orange	...	19.7	5.7	13.5	8.1	6.7	11.6
PH	...	7.6	7.8	8.4	8.6	8.6	8.2
Dissolved oxygen (cc/L)	...	5.4	4.62	5.0	...	5.7	6.0
% of Saturation	...	...	...	...	...	...	...
Ch'orides	...	6.0	1.2	4.0	3.4	3.6	2.1
Oxygen Absorbed (Tidys 4 Hrs.)	...	0.167	0.211	0.219	0.165	0.311	0.215
Ammoniacal Nitrogen	...	0.002	Trace	0.008	Nil	Nil	Nil
Albuminoid Nitrogen	...	0.036	0.020	0.028	0.001	0.072	0.012
Nitrous Nitrogen	...	Nil	Trace	Nil	Nil	Nil	Nil
Nitric Nitrogen	...	Nil	Trace	Nil	Nil	Nil	Nil
Phosphate (PO ₄)	...	...	...	...	Nil	...	0.001
Silicates (SiO ₂)	...	...	...	...	1.3	...	1.2
Iron (Fe)	...	0.050	0.080	0.025	0.007	0.015	0.068
Total Hardness	14.9	14.5	6.0	10.6	6.0	4.4	8.2
C. Bacteriological Conditions —							
B. Coli in ? cc	+ 1cc	+ 0.1cc	+ 5cc	+ 60cc	— 60 cc	+ 5 cc	+ 1 cc

* Samples were not collected in January, February, September, October and November 1952.

TABLE VI

Limnological Conditions of the Sources of the City Water Supply :—(d) Red Hills Reservoir at Jones Tower in 1952
(Results expressed in parts per 100,000)

—	31-1-52	29-2-52	29-3-52	25-4-52	31-5-52	18-6-52	25-7-52	28-8-52	30-9-52	15-11-52	29-12-52
A. Physical Conditions—											
Time	8 A.M.	8-45 A.M.	9-20 A.M.	10 A.M.	10 A.M.	9-20 A.M.	10 A.M.	9-45 A.M.	9-30 A.M.	10-5 A.M.	10 A.M.
Depth on that date (in feet)	31-21	30-31	29-20	27-82	37-30	38-34	37-06	35-84	34-76	38-51	45-80
Colour and Transparency *	Y & O	Y & O	Y & O	Y & O	Whitish	G & O	G & O	G & O	Y & O	Y & O	S.G. & H.
Temperature (°C)	...	...	32.5	31.0	31.0	30.8	30.0	31.0	32.0	29.0	27.0
B. Chemical Conditions—											
Total Solids	27.2	25.6	21.6	38.4	20.0	26.0	33.2	28.2	26.0	26.4	27.2
Alkalinity to { Phenolphthalein.	...	...	...	Nil	0.5	0.6	0.8	— 0.8	— 0.2	0.5	— 0.1
{ Methyl Orange...	...	...	...	14.8	5.1	7.5	9.3	9.2	10.5	8.6	9.3
PH	8.1	9.4	8.9	8.1	7.4	7.8	8.6	8.0	8.0	8.6	8.0
Dissolved oxygen (cc per litre) ...	4.52	2.5	1.68	3.64	4.27	5.5	4.3	5.1	4.3	6.0	5.7
% Saturation	...	...	...	...	...	100	77.2	...	...	106	97.6
Chlorides	4.7	4.9	5.7	7.0	1.6	1.6	2.0	1.5	1.7	1.9	1.8
Oxygen absorbed (Tidy's 4 Hrs).	0.23	0.239	0.278	0.303	0.206	0.241	0.204	0.216	0.258	0.259	0.238
Ammoniacal Nitrogen (NH ₃ -N),	0.022	0.006	0.011	0.002	0.002	0.001	Nil	0.004	Nil	Nil	Nil
Alabuminoid Nitrogen (Alb-N)...	0.036	0.010	0.036	0.048	0.032	0.052	0.064	0.080	0.072	0.048	0.036
Nitrous Nitrogen (NO ₂ -N)	Nil	Nil	Min-Trace	Nil	Present	Trace	Nil	Nil	Nil	Nil	Nil
Nitric Nitrogen (NO ₃ -N)	Min Trace	Nil	Nil	Nil	Trace	Min-Trace	Nil	Nil	Nil	Nil	Nil
Total hardness	...	...	5.2	7.0	5.2	6.8	7.2	8.6	10.0	8.6	6.8
Iron (Fe)	...	...	...	...	0.015	0.025	0.004	0.004	0.015	0.002	0.015
C. Bacteriological Conditions—											
B. Coli in ? CC	20	60	20	1.0	5.0	1.0	5.0	1.0	1.0	1.0	1.0

* Y & O — Yellowish and Opaque G & O — Greenish and Opaque S.G. & H — Slightly greenish and hazy

TABLE VII
Physico-Chemical and Bacteriological conditions of Raw Water at Kilpauk end of the Raw Water Conduits.
Weekly Averages for 1952

Months and Weeks ending	January						February						March				April	
	5-1-52	12-1-52	18-1-52	25-1-52	31-1-52		2-2-52	9-2-52	16-2-52	23-2-52	29-2-52	8-3-52	15-3-52	22-3-52	31-3-52	1-4-52	7-4-52	14-4-52
	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O
Colour	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Transparency	Nil	Nil	Nil	Trace	0.072	...	...	0.001	Nil	Tr	...	Tr	0.001	0.001	0.001	...	0.002	0.002
Ammoniacal Nitrogen	0.020	0.030	0.040	0.033	0.044	...	...	0.040	0.046	0.036	...	0.022	0.057	0.043	0.038	...	0.042	0.057
Albuminoid Nitrogen	Tr	Nil	MTr	Tr	Nil	...	Nil	Nil	Nil	Nil	Nil	Nil	Nil	MTr	MTr	Nil	Nil	Nil
Nitrous Nitrogen	Nil	Nil	Nil	Nil	Nil	MTr	MTr	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Nitric Nitrogen	4.6	4.6	4.8	5.9	4.8	...	...	5.1	5.0	4.9	5.9	5.2	5.9	5.3	5.6	6.5	6.2	6.5
Chlorides	4.9	5.3	5.0	5.2	5.4	...	...	7.6	7.5	7.2	6.5	6.6	6.5	6.5	6.3	4.3	4.2	4.3
Dissolved oxygen c c/l	0.235	0.233	0.232	0.232	0.232	...	0.219	0.234	0.233	0.293	0.234	0.264	0.234	0.231	0.248	0.293	0.303	0.301
Oxygen Absorbed (Tidy's 4 Hrs)	9.4	9.4	9.6	9.4	9.2	...	...	9.3	9.4	9.4	9.4	9.4	9.4	9.1	9.3	8.5	8.3	8.1
P. H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.95	1.2	0.2
Alkalinity to { Phenolphthalein Methyl Orange	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.94	9.6	11.2

Total Hardness	...	...	...	...	...	...	...	6.0	...	...	...	6.4	5.8	5.2	4.9	...	...	...
Total Solids	...	26.0	28.0	...	...	...	...	25.9	26.0	...	...	28.4	28.4	28.0	27.8	28.8	...	32.2
Phosphate (Po ₄)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Nil
Silicates (Sio ₂)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.017
Iron (Fe)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Nil
% Samples showing B. Coli present in 5 c.c.and upwards...	70	80	60	65	75	...	100	50	0	100	100	100	100	100	100	40	...	...

Y & O Yellowish and opeque,

TABLE VII—contd.

Physico-Chemical and Bacteriological conditions of Raw Water at Kilpauk end of the Raw Water Conduits.
Weekly Averages for 1952

Month and Week ending	April		May				June				July				August					
	21st	30th	3rd	10th	17th	24th	31st	7th	14th	21st	30th	5th	12th	19th	26th	31st	2nd	9th	16th	23rd
Colour & Transparency cms)	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	G & O	G & O	G & O	G & O	G & O	G & O	G & O	G & O	G & O	Y & O	Y & O	Y & O	Y & O
Ammoniacal Nitrogen	...	...	...	...	...	...	4.5	...	...	16.6	16.6	17.5	17.5	23.0	21.0	18.0	25.5	19.10	...	22.5
Albuminoid Nitrogen	0.002	0.002	0.003	0.002	0.002	...	0.029	0.016	0.009	Tr.	Nil	Nil	0.029	...	0.003	0.018	0.020	Nil	Nil	0.008
Nitrous Nitrogen	0.058	0.046	0.044	0.069	0.076	0.031	0.024	0.024	0.046	0.048	0.071	0.054	0.036	...	0.104	0.064	0.068	0.082	0.96	0.084
Nitric Nitrogen	Nil	Nil	Nil	M T R	Nil	M T R	M T R	M T R	Tr.	Tr.	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	M T R	Nil
Chlorides	9.6	8.6	...	9.0	13.0	3.8	2.0	2.2	1.3	1.2	1.6	2.5	2.2	2.2	3.7	1.6	1.6	1.9	1.9	2.8
Dissolved oxygen cc/l	4.0	3.7	3.8	3.6	4.7	8.5	4.4	4.6	4.3	4.4	4.8	4.8	3.5	5.4	7.7	5.7	5.7	5.7	7.7	4.8
Oxygen Absorbed (Tidy's 4 Hrs)	0.296	0.323	0.324	0.317	0.243	0.282	0.183	0.189	0.167	0.207	0.250	0.298	0.297	0.223	0.273	0.23	0.246	0.265	0.219	0.207
P. H.	8.3	8.1	...	8.0	7.9	8.1	7.2	7.6	7.9	7.8	8.7	8.6	8.3	8.4	8.4	8.0	8.0	8.1	8.0	8.0
Alkalinity { Phenolph- thalein Methyl Orange	0.4	0.4	...	-0.5	-0.7	0.4	-0.45	-0.3	...	...	0.9	0.5	0.4	0.5	-0.2	-0.2	-0.2	-0.5	-0.3	-0.2
Total Hardness	13.4	15.2	...	16.6	17.5	12.5	6.1	6.2	...	...	5.8	7.7	9.7	7.5	8.9	8.0	7.8	8.8	8.3	9.7
Total Solids	9.2	10.0	...	12.0	14.0	14.0	10.0	6.2	6.9	7.2	6.5	9.0	8.8	7.4	8.5	7.8	7.6	8.8	...	9.3
Phosphates (Po ₄)	36.0	47.2	...	41.6	...	26.0	...	25.0	26.4	47.8	36.4	50.0	30.4	46.4	40.0	31.6	...	30.8	30.8	36.0
Silicates (SiO ₂)	Nil	Nil	...	Nil	Nil	0.002	0.012	...	...	...	...	Nil	Nil	Nil	Nil	Nil	...	Nil	Nil	0.001
Iron (Fe)	0.17	0.29	...	1.8	2.6	0.016	...	...	...	...	...	0.46	0.52	0.54	0.50	1.10	...	1.1	1.8	0.050
B. coli present in 5cc & upwards in ?	0.004	0.030	...	0.040	0.008	0.158	0.050	...	...	...	...	0.120	0.015	0.025	0.025	0.010	...	0.006	0.010	0.006
% of samples	50	30	100	Nil	33	Nil	100	Nil	16	Nil	Nil	Nil	Nil	...	75	33	100	50	80	100
Biological conditions																				
(a) Cylindrocapsulum Planktonicum	...	...	...	...	...	...	...	...	...	...	...	...	...	36,000	10,000	31,000	...	27,000	14,500	25,800
(b) Microcystis Spp per ml	...	...	...	...	...	...	...	...	...	...	...	...	...	800	650	200	...	300	450	400

G & O Greenish and opaque

TABLE VII—*contd.*
Physico-Chemical and Bacteriological conditions of Raw Water at Kilpauk end of the Raw Water Conduits.

Months and Week ending	August				September				October				November				December			
	30th	6th	13th	20th	29th	4th	11th	18th	25th	31st	8th	15th	22nd	29th	6th	13th	20th	27th	13th	
Colour	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	
Transparency	21.8	12.2	13.8	15.9	14.0	16.5	23.8	15.0	16.9	25.0	30.0	30.0	> 30.0	> 30.0	27.0	...	29.5	...	> 30.0	
Ammoniacal Nitrogen (Am-N)	0.009	0.002	Trace	0.007	Trace	0.003	0.006	Trace	0.026	0.040	0.002	0.024	0.013	0.005	0.015	Nil	0.015	0.002	Nil	
Albuminoid Nitrogen (Alb-N)	0.075	0.052	0.102	0.064	0.054	0.076	0.064	0.084	0.066	0.062	0.038	0.041	0.048	0.042	0.056	0.64	0.028	0.040	0.024	
Nitrous Nitrogen (NO ₂ -N)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	M Tr	Nil	Nil	Nil	Nil	Nil	Trace	Trace	Trace	Nil	
Nitric Nitrogen (NO ₃ -N)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	M Tr	
Chlorides	3.2	1.7	2.6	4.2	2.5	5.2	2.4	2.4	2.5	2.7	2.2	2.1	2.4	4.0	4.0	5.0	3.1	2.6	2.8	
Dissolved oxygen (cc/l)	5.3	5.2	4.9	4.7	5.0	4.8	4.0	4.7	4.3	4.3	4.7	4.6	4.2	4.4	4.7	4.9	5.1	4.9	4.9	
Oxygen absorbed (Tidy's 4 Hrs)	0.250	0.300	0.300	0.304	0.298	0.294	0.279	0.204	0.272	0.238	0.231	0.201	0.214	0.225	0.132	0.140	0.173	0.198	0.234	
P.H.	8.1	8.5	8.2	8.1	8.2	8.0	7.6	8.3	7.8	7.5	7.8	8.0	7.6	8.0	7.9	7.8	7.9	8.0	7.4	
Alkalinity	0.5	0.1	0.6	0.4	0.5	—0.5	—0.8	—0.4	—0.4	—0.6	—0.5	—0.4	—0.5	—0.4	—0.7	—0.5	—0.2	—0.2	—0.3	
Total Hardness	9.0	8.8	9.3	9.4	9.2	11.5	10.8	9.5	9.3	9.9	9.5	10.6	10.5	11.5	9.9	8.1	7.7	8.3	7.8	
Total Solids	8.7	12.0	8.8	9.6	9.7	11.2	9.6	8.6	8.4	8.6	7.9	7.7	8.6	9.0	10.5	8.5	7.3	7.5	8.0	
Phosphates (Po ⁴)	31.8	28.0	28.4	20.8	...	33.2	31.2	24.0	26.0	29.6	26.0	29.2	23.2	27.2	42.4	40.0	...	16.0	23.6	
Silicates (Sio ²)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.001	0.001	0.002	Nil	0.001	Nil	0.001	
Iron (Fe)	1.3	1.3	...	1.3	1.3	1.1	1.1	1.1	1.0	1.2	1.2	1.1	1.7	1.3	1.3	1.3	1.3	...	1.1	
B. Coli presents in 5c.c and upwards in?	0.006	0.010	0.004	0.015	0.006	0.010	0.006	0.008	0.030	0.010	0.015	0.013	0.018	0.008	0.010	0.023	0.008	0.020	0.010	
% of samples	40	Nil	66	75	75	66	66	Nil	Nil	40	14	Nil	33	40	Nil	Nil	Nil	Nil	33 1/3	
Biological Conditions																				
(a) <i>Cylindrospermum</i> planktonicum var																				
Novo per m.l.	17,300	24,000	20,000	18,500	...	27,600	12,400	28,500	16,000	...	19,000	14,400	12,900	11,900	...	...	...	...	...
(b) <i>Microcystis</i> spp. per m.l.	100	820	570	450	...	400	390	1120	460	...	470	220	430	650	...	...	...	...	...

TABLE VIII Showing the Monthly Averages of Raw water, Temperature, Rainfall, Lake level and organic matter from 1922 to 1952

Months	January					February					March					April					May					June				
Year	Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter	
				O.A.	A.N.				O.A.	A.N.				O.A.	A.N.				O.A.	A.N.				O.A.	A.N.				O.A.	A.N.
1922	75.6	4.50	43.94	0.114	0.020	77.0	Nil	42.98	0.046	0.028	84.0	Nil	41.56	0.160	0.046	84.9	Nil	40.03	0.168	0.039	87.2	1.00	38.52	0.188	0.036	87.7	4.70	36.92	0.200	0.048
1923	75.2	5.75	45.45	0.132	0.026	77.7	0.07	45.53	0.162	0.030	81.0	1.15	45.09	0.178	0.039	84.8	Nil	44.14	0.184	0.034	87.1	0.42	42.78	0.190	0.039	88.9	1.93	41.71	0.198	0.050
1924	75.9	Nil	41.10	0.158	0.040	77.5	Nil	40.46	0.179	0.036	80.8	Nil	39.57	0.195	0.040	85.6	Nil	37.11	0.209	0.040	88.0	Nil	36.28	0.199	0.048	88.1	1.51	35.01	0.198	0.043
1925	74.4	0.48	43.15	0.136	0.032	76.8	..	42.19	0.140	0.038	79.6	1.25	41.09	0.170	0.040	84.0	Nil	39.72	0.176	0.026	85.8	4.72	38.73	0.206	0.035	87.3	0.33	38.36	0.191	0.0
1926	76.7	1.08	45.77	0.122	0.041	77.6	..	45.39	0.139	0.042	82.4	0.70	44.31	0.175	0.044	85.7	0.13	43.55	0.150	0.053	88.3	0.20	42.40	0.156	0.040	88.8	0.05	41.02	0.176	0.046
1927	77.0	0.44	40.16	0.135	0.047	79.0	0.02	38.97	0.187	0.040	82.4	Nil	37.73	0.208	0.042	85.4	0.25	36.41	0.209	0.048	88.5	1.20	31.89	0.228	0.047	88.0	2.31	33.39	0.228	0.047
1928	77.2	0.56	41.39	0.146	0.018	78.3	1.45	40.72	0.160	0.036	80.2	0.35	39.72	0.182	0.040	85.0	0.02	38.71	0.160	0.044	83.6	0.90	37.66	0.147	0.048	89.0	1.40	35.87	0.162	0.050
1929	75.8	1.70	43.15	0.143	0.031	77.1	3.71	42.58	0.150	0.031	80.5	Nil	42.64	0.151	0.038	84.1	0.76	41.67	0.179	0.042	88.3	0.33	40.52	0.187	0.050	87.3	0.47	39.18	0.191	0.055
1930	75.6	2.78	45.21	0.155	0.045	77.8	2.65	45.47	0.175	0.031	80.8	Nil	45.34	0.186	0.045	84.5	Nil	44.28	0.237	0.051	85.7	6.10	44.46	0.200	0.044	85.0	2.31	44.33	0.201	0.060
1931	76.4	0.20	45.87	0.141	0.040	77.8	Nil	45.21	0.139	0.035	81.1	Nil	44.04	0.128	0.032	84.8	1.72	42.89	0.145	0.044	87.6	0.77	42.60	0.159	0.052	88.5	3.33	41.70	0.152	0.056
1932	75.2	Nil	45.22	0.120	0.020	77.4	0.09	45.26	0.133	0.023	79.4	Nil	44.05	0.138	0.027	83.4	0.24	42.87	0.135	0.029	85.2	2.95	42.57	0.171	0.039	88.5	1.43	40.99	0.192	0.045
1933	76.2	..	45.05	0.102	0.034	76.7	Nil	43.96	0.123	0.035	78.8	3.50	43.57	0.144	0.044	83.7	Nil	43.13	0.135	0.035	86.1	Nil	42.25	0.134	0.035	87.9	3.39	40.32	0.156	0.032
1934	75.9	2.77	45.86	0.127	0.033	75.6	Nil	45.50	0.128	0.031	79.7	Nil	44.31	0.119	0.036	83.8	Nil	43.03	0.130	0.037	87.5	Nil	42.48	0.139	0.037	86.7	3.32	40.74	0.146	0.033
1935	75.3	1.47	45.05	0.154	0.050	76.7	..	44.09	0.158	0.044	80.5	Nil	43.19	0.166	0.049	84.9	Nil	41.77	0.161	0.064	89.1	Nil	40.08	0.180	0.061	88.0	1.64	38.83	0.184	0.057
1936	76.4	Nil	45.31	0.119	0.028	78.6	1.37	44.33	0.137	0.040	80.2	0.99	43.43	0.153	0.044	84.9	Nil	41.92	0.145	0.041	86.8	0.04	40.72	0.161	0.049	86.3	6.23	40.09	0.176	0.046
1937	75.8	0.16	45.05	0.139	0.045	78.3	0.12	44.60	0.153	0.049	81.1	Nil	43.67	0.145	0.046	82.9	2.20	42.33	0.144	0.050	87.8	Nil	40.99	0.154	0.042	88.9	0.67	39.48	0.159	0.053
1938	75.7	Nil	45.01	0.108	0.038	78.3	0.39	45.01	0.110	0.039	81.3	0.94	44.77	0.101	0.047	84.4	Nil	43.39	0.125	0.059	89.5	0.06	41.59	0.129	0.049	85.8	2.18	39.78	0.121	0.054
1939	75.3	0.55	38.79	0.160	0.066	76.1	Nil	37.89	0.157	0.078	79.7	0.54	36.67	0.155	0.060	83.3	4.79	35.93	0.140	0.049	88.4	Nil	35.20	0.161	0.057	88.3	1.02	33.62	0.196	0.060
1940	74.4	Nil	42.43	0.146	0.025	76.3	..	41.37	0.145	0.028	82.3	Nil	40.21	0.164	0.035	84.0	1.75	39.02	0.172	0.035	87.6	4.49	38.10	0.174	0.037	87.5	1.82	37.59	0.174	0.050
1941	84.3	0.08	45.64	0.139	0.040	86.5	0.25	44.57	0.157	0.038	89.2	Nil	43.67	0.167	0.040	93.0	0.49	42.17	0.168	0.052	98.1	Nil	40.22	0.184	0.041	99.1	4.32	38.58	0.166	0.048
1942	84.1	Nil	45.51	0.131	0.036	86.0	Nil	44.68	0.131	0.040	88.5	Nil	43.57	0.132	0.036	91.3	1.37	42.36	0.151	0.046	97.4	Nil	41.10	0.153	0.046	99.2	1.89	39.51	0.152	0.036
1943	83.2	3.25	43.53	0.133	0.037	85.3	0.12	44.15	0.141	0.035	88.7	Nil	43.13	0.133	0.030	92.2	1.50	41.86	0.137	0.040	91.4	10.56	42.23	0.131	0.038	96.9	1.95	43.83	0.128	0.034
1944	83.9	0.27	45.57	0.110	0.022	86.8	2.30	44.68	0.117	0.032	85.9	8.92	44.85	0.109	0.034	92.6	Nil	45.04	0.122	0.032	97.9	Nil	43.69	0.124	0.030	98.6	3.53	42.33	0.139	0.030
1945	83.0	Nil	45.84	0.119	0.014	91.0	Nil	45.37	0.120	0.030	91.5	0.70	44.27	0.136	0.029	90.8	2.15	43.95	0.124	0.026	95.3	Nil	44.22	0.139	0.025	101.1	1.00	43.12	0.144	0.026
1946	82.3	0.50	44.30	0.144	0.040	86.3	..	43.45	0.146	0.033	91.3	0.70	43.19	0.170	0.034	94.2	Nil	41.91	0.185	0.034	101.2	1.17	40.23	0.194	0.034	97.5	3.70	38.45	0.220	0.050
1947	83.0	7.42	45.45	0.119	0.025	84.9	0.03	45.60	0.122	0.024	90.2	Nil	45.50	0.143	0.028	96.7	Nil	42.95	0.162	0.038	99.0	Nil	41.76	0.162	0.030	100.7	Nil	40.61	0.142	0.027
1948	83.5	0.28	41.72	0.162	0.040	88.1	0.12	41.81	0.200	0.047	91.3	Nil	40.84	0.226	0.049	95.0	0.15	39.50	0.246	0.070	102.0	Nil	38.63	0.284	0.068	102.1	0.51	38.46	0.292	0.059
1949	83.3	Nil	39.27	0.258	0.062	88.3	Nil	38.35	0.263	0.059	92.6	Nil	37.48	0.265	0.060	96.1	Nil	36.25	0.267	0.072	96.7	7.33	35.14	0.272	0.072	95.9	5.38	35.41	0.330	0.080
1950	74.9	0.22	40.62	0.147	0.066	78.8	2.90	40.31	0.187	0.051	82.7	0.70	40.43	0.204	0.050	86.8	Nil	40.45	0.246	0.068	91.0	1.79	38.92	0.234	0.065	91.1	1.23	37.78	0.259	0.061
1951	75.6	Nil	38.75	0.202	0.058	76.4	Nil	38.20	0.219	0.058	82.4	1.09	36.50	0.250	0.062	85.6	1.29	38.10	0.244	0.066	89.8	Nil	35.40	0.241	0.065	95.5	0.84	34.50	0.252	0.067
1952	...	0.68	31.70	0.233	0.035	...	0.34	30.73	0.238	0.041	...	Nil	29.71	0.244	0.041	...	Nil	28.30	0.303	0.051	...	18.73	29.88	0.269	0.049	...	2.19	38.19	0.203	0.047
Average	78.04	1.149	43.639	0.1407	0.0383	80.29	0.5197	43.087	0.1535	0.0387	83.7	1.66	42.28	0.165	0.042	87.28	0.63	41.15	0.172	0.046	80.60	1.47	40.15	0.180	0.045	91.51	12.15			

TABLE VIII—contd.

Showing the Monthly Averages of Raw water, Temperature, Rainfall, Lake Level and Organic matter from 1922 to 1952

Months	July					August					September					October					November					December				
Year	Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter		Temp. °F	Rain- fall inch	Level ft.	Org. Matter	
				O.A.	A.N.				O.A.	A.N.				O.A.	A.N.				O.A.	A.N.				O.A.	A.N.				O.A.	A.N.
1922	85.6	1.80	36.06	0.180	0.050	84.8	4.5	35.22	0.210	0.068	85.00	3.40	34.35	0.268	0.048	80.3	13.90	33.92	0.204	0.046	78.1	32.70	44.09	0.188	0.047	74.7	1.80	45.47	0.189	0.040
1923	86.6	2.33	40.38	0.169	0.040	85.3	1.43	39.49	0.215	0.054	83.40	3.56	38.34	0.240	0.041	80.8	14.90	37.78	0.198	0.046	78.5	4.29	41.53	0.167	0.044	76.5	3.62	42.29	0.167	0.038
1924	84.3	5.20	34.12	0.201	0.046	85.0	0.72	38.35	0.210	0.048	82.1	7.24	32.66	0.220	0.044	81.8	4.11	35.91	0.200	0.048	77.2	17.38	38.85	0.100	0.046	75.0	0.78	43.49	0.152	0.042
1925	85.2	2.90	37.02	0.200	0.023	83.4	4.70	37.49	0.216	0.030	84.3	1.98	37.53	0.192	0.041	80.4	20.25	38.75	0.162	0.021	77.7	15.78	42.54	0.143	0.022	75.2	13.87	44.66	0.141	0.034
1926	85.1	3.74	39.01	0.177	0.044	84.8	3.32	38.02	0.186	0.042	83.8	2.18	37.54	0.195	0.048	81.5	5.31	38.91	0.181	0.049	77.2	8.28	41.62	0.142	0.043	85.2	1.21	41.61	0.149	0.029
1927	86.6	1.02	32.18	0.233	0.053	85.0	3.86	31.19	0.272	0.060	83.6	5.94	30.73	0.279	0.069	82.8	5.42	33.32	0.314	0.060	77.5	12.26	35.26	0.167	0.064	76.6	1.91	41.89	0.130	0.030
1928	86.0	2.78	34.59	0.235	0.049	83.9	3.15	33.50	0.237	0.054	83.7	5.57	32.33	0.220	0.058	81.2	20.19	34.39	0.219	0.050	79.4	5.15	42.76	0.141	0.058	77.0	2.16	43.79	0.150	0.031
1929	86.3	1.97	37.98	0.221	0.049	83.7	2.45	36.87	0.224	0.053	83.5	5.25	35.86	0.217	0.056	81.7	10.01	35.78	0.201	0.049	78.0	14.57	41.65	0.157	0.031	76.8	3.72	45.08	0.131	0.032
1930	87.1	1.91	44.10	0.176	0.040	85.1	2.23	43.74	0.196	0.038	84.0	2.18	42.85	0.230	0.040	81.1	23.59	43.83	0.154	0.041	76.8	26.14	44.55	0.157	0.045	76.3	2.40	45.76	0.192	0.032
1931	84.6	4.51	44.37	0.140	0.055	85.1	2.61	42.97	0.153	0.031	83.3	5.65	43.19	0.154	0.031	82.5	6.94	44.26	0.141	0.028	78.1	15.18	44.52	0.121	0.025	76.5	12.17	44.46	0.110	0.021
1932	86.5	0.34	39.47	0.168	0.043	83.4	2.42	38.39	0.184	0.053	83.7	4.22	37.95	0.157	0.035	80.8	14.06	37.65	0.156	0.038	78.0	12.37	41.76	0.113	0.037	75.7	1.86	45.11	0.192	0.028
1933	85.7	2.38	39.43	0.142	0.003	84.1	3.03	38.93	0.161	0.043	84.7	2.85	38.23	0.186	0.057	79.9	7.51	37.02	0.165	0.051	78.1	9.40	38.86	0.153	0.043	75.4	14.55	42.39	0.135	0.044
1934	85.3	1.61	39.53	0.168	0.049	83.4	8.22	39.14	0.172	0.045	84.2	3.46	39.93	0.169	0.050	81.0	15.12	39.66	0.148	0.054	77.6	2.90	45.54	0.131	0.044	74.9	1.39	45.76	0.149	0.040
1935	86.7	1.92	36.02	0.191	0.064	83.1	4.93	36.07	0.212	0.056	83.0	3.36	42.81	0.187	0.044	81.2	17.91	44.58	0.161	0.040	78.2	10.25	45.69	0.133	0.036	76.2	1.52	45.12	0.122	0.032
1936	84.9	4.57	39.03	0.173	0.046	83.8	5.50	38.95	0.180	0.056	83.9	4.12	38.27	0.173	0.051	82.0	5.47	37.53	0.161	0.057	78.7	17.45	40.94	0.147	0.046	77.3	2.57	45.03	0.148	0.048
1937	84.6	3.84	38.13	0.162	0.055	84.3	4.05	37.31	0.168	0.058	84.0	8.55	36.50	0.165	0.044	80.5	12.86	41.82	0.152	0.037	76.9	26.68	45.84	0.139	0.040	73.9	3.65	45.89	0.110	0.034
1938	85.4	1.02	38.31	0.130	0.058	84.0	3.35	37.25	0.126	0.042	82.5	5.39	38.01	0.134	0.051	83.1	5.78	40.30	0.148	0.045	77.8	0.23	40.97	0.133	0.051	75.6	1.60	39.68	0.145	0.052
1939	86.3	2.93	32.46	0.265	0.073	86.5	1.46	31.01	0.277	0.081	83.5	5.68	30.04	0.320	0.087	81.3	9.38	30.00	0.301	0.070	77.4	10.22	35.99	0.196	0.033	76.9	1.33	43.01	0.151	0.020
1940	86.0	3.63	36.63	0.158	0.052	84.9	2.65	35.68	0.208	0.050	83.9	3.67	34.91	0.179	0.068	81.6	9.83	34.96	0.149	0.038	77.7	19.01	42.17	0.144	0.029	76.6	6.07	45.97	0.128	0.029
1941	98.6	1.16	37.39	0.191	0.052	97.3	7.17	35.99	0.199	0.043	91.9	6.69	35.59	0.177	0.053	88.7	12.46	39.87	0.177	0.037	83.8	16.64	43.21	0.147	0.021	82.9	8.73	45.85	0.128	0.031
1942	96.8	2.18	38.27	0.157	0.046	93.6	3.80	37.17	0.162	0.040	94.2	3.68	36.61	0.166	0.050	89.6	3.53	37.39	0.150	0.039	86.3	2.61	37.98	0.151	0.029	82.1	12.94	39.27	0.150	0.030
1943	93.6	1.41	43.89	0.134	0.040	93.5	5.50	43.52	0.150	0.036	93.0	0.59	44.93	0.172	0.046	85.7	26.44	44.99	0.122	0.038	84.1	13.77	45.23	0.118	0.030	82.1	1.41	45.13	0.100	0.036
1944	93.7	5.66	42.11	0.137	0.037	94.0	6.27	42.55	0.125	0.038	91.4	2.86	44.31	0.118	0.038	89.6	9.10	43.64	0.129	0.038	83.7	24.78	43.56	0.139	0.032	82.0	7.64	45.85	0.101	0.034
1945	95.5	3.51	42.33	0.141	0.033	94.0	2.00	42.80	0.161	0.038	91.8	2.51	42.60	0.158	0.035	89.4	1.36	42.42	0.175	0.039	84.2	20.09	44.42	0.177	0.037	81.66	Nil	45.23	0.125	0.035
1946	97.0	4.60	38.00	0.242	0.053	93.7	2.79	37.28	0.257	0.076	92.5	2.57	36.27	0.275	0.090	89.2	8.70	35.73	0.256	0.081	84.8	28.68	43.52	0.172	0.059	81.50	23.95	42.33	0.143	0.033
1947	94.9	1.95	38.80	0.150	0.029	92.0	3.44	37.52	0.177	0.034	91.8	10.62	38.92	0.188	0.024	88.5	6.29	34.63	0.192	0.032	86.2	2.28	41.64	0.183	0.053	83.3	0.12	40.80	0.178	0.044
1948	96.4	5.05	37.58	0.300	0.076	94.5	1.77	36.33	0.354	0.082	94.1	5.29	35.48	0.337	0.082	89.7	3.99	34.97	0.337	0.084	86.4	7.74	36.67	0.284	0.072	82.4	0.76	38.39	0.226	0.066
1949	92.9	4.20	35.61	0.272	0.070	92.5	6.81	36.65	0.222	0.073	90.7	3.88	40.24	0.213	0.054	91.2	1.82	41.52	0.168	0.048	85.2	5.04	41.14	0.175	0.053	84.5	Nil	41.42	0.175	0.054
1950	87.7	2.97	36.45	0.286	0.073	85.33	3.84	35.10	0.309	0.031	84.2	4.45	34.21	0.306	0.080	81.9	7.33	34.71	0.280	0.074	78.3	6.73	36.44	0.231	0.074	75.9	Nil	37.46	0.194	0.066
1951	89.0	3.46	33.45	0.290	0.066	86.4	6.72	31.70	0.288	0.063	85.2	1.18	32.10	0.290	0.060	85.6	1.82	30.80	0.290	0.060	80.4	12.18	31.00	0.277	0.068	76.3	0.11	32.40	0.227	0.044
1952	...	1.79	37.33	0.264	0.065	...	1.77	35.27	0.237	0.081	...	2.52	35.23	0.301	0.068	...	8.40	36.68	0.270	0.070	...	5.40	38.35	0.217	0.042	...	6.43	42.22	0.175	0.042
Average	88.74	2.89	37.99	0.193	0.050	87.35	3.72	37.38	0.207	0.052	86.36	4.29	37.44	0.210	0.053	83.82	10.28	38.04	0.193	0.048	80.03	13.36	41.33	0.162	0.043	77.89	4.43	42.69	0.151	0.037

1952	Quantity of water filtered in million gallon.			Dose of Chlorine applied to Raw water (in P. P. M.)			Dose of Chlorine (in P. P. M.) for filtered water			Lbs. of Chlorine used per month for pre-chlorination	Lbs. of Chlorine used per month for post-chlorination	Total lbs of liquid chlorine used per month	Cost of Chlorine per lb	Total Cost of chlorine	Average No of beds per day in use
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean						
January	13.66	10.33	11.04	2.32	0.61	1.94	2.62	1.91	2.41	6563	8268	14831	0.80 S.T, 0.0.3	7,415 8 0	7.0
February	11.16	10.66	10.72	2.25	1.26	2.04	2.53	2.24	2.42	6323	7595	13918	"	6.959 0 0	6.0
March	11.16	10.66	10.82	2.25	1.27	2.11	2.61	2.23	2.45	7368	8212	15580	"	7,790 0 0	6.0
April	11.66	9.33	10.47	2.57	1.30	2.21	3.05	2.29	2.53	6961	7955	14916	"	7 458 0 0	6.0
May	17.66	9.00	12.19	2.60	0.65	1.71	3.81	2.35	2.80	6118	10692	16810	"	8,405 0 0	7.0
June	18.00	16.99	17.47	2.00	0.67	1.17	3.53	1.60	2.85	4790	15135	19925	"	9,962 8 0	11.0
July	17.99	15.32	16.90	2.82	1.41	2.18	2.70	2.21	2.30	11444	13110	24554	"	12,277 0 0	10.0
August	18.33	15.99	17.66	2.85	1.54	2.17	3.23	2.11	29.1	11571	15522	27093	"	13,546 8 0	10
September	19.66	14.99	17.20	3.05	1.70	2.35	4.28	2.80	3.34	12129	17260	29389	"	14,694 8 0	11.0
October	18.00	14.66	16.73	2.62	1.00	1.49	4.07	2.49	3.49	7814	18231	26045	"	13,02 8 0	10
November	17.32	15.66	16.66	1.76	0.81	1.55	2.95	1.04	1.72	7738	8595	16333	"	8,163 8 0	9.0
December	22.66	15.66	18.35	2.45	0.81	1.47	3.09	1.37	2.05	8146	11603	19749	"	98,74 8 0	9.0
													S. Tax	1,19,571 8 0 1868 5 0 1,21,439 13 0	

TABLE X
Some Important Physical, Chemical and Bacteriological Conditions of Chlorinated Raw Water in 1952
(Results expressed in Parts per 100,000)

Month	No. of Samples	Smell	Ammoniacal Nitrogen	Albuminoid Nitrogen	Absorbed Oxygen	Nitrites	Nitrates	Total Solids	Total Hardness	% Samples showing Lactose fermenters in							
										No. of Samples	-60 cc	+60 cc	+20 cc	+50 cc	+ 5 cc	+1 cc	+0.1 cc
January	20	Nil	0.001	0.033	0.222	Nil	MTr	...	...	20	100	Nil	Nil	Nil	Nil	Nil	...
February	21	Nil	Trace	0.034	0.225	Nil	Nil	...	...	21	23	77	Nil	Nil	Nil	Nil	...
March	24	Nil	0.001	0.044	0.231	Nil	MTr	...	...	24	Nil	4	21	Nil	75	Nil	...
April	23	Nil	0.002	0.050	0.296	Nil	Nil	...	...	20	Nil	10	Nil	25	45	20	...
May	26	Nil	0.009	0.058	0.274	Nil	MTr	...	...	26	Nil	Nil	Nil	Nil	42	58	...
June	24	Nil	0.003	0.046	0.184	M T R	MTr	...	...	24	Nil	Nil	16	5	Nil	79	...
July	25	Nil	0.007	0.068	0.247	Nil	Nil	...	8.1	18	17	Nil	44	17	22	Nil	...
August	23	Nil	0.007	0.082	0.225	Nil	Nil	31.6	8.6	18	11	11	27	16	22	13	...
September	18	Nil	0.007	0.074	0.295	Nil	Nil	...	9.9	15	40	27	Nil	13	13	7	...
October	24	Nil	0.020	0.069	0.254	Nil	MTr	...	8.7	24	20	4	12	25	12	27	...
November	24	Chlori- nous	0.027	0.037	0.205	Nil	Nil	...	8.9	25	8	28	56	8	Nil	Nil	...
December	23	Chlori- nous	0.016	0.043	0.164	M T R	Nil	...	8.5	21	10	20	55	15	Nil	Nil	...

TABLEXI

Showing the Production of Sulphuretted Hydrogen in the Sand
Filters at the Kilpauk Water Works in 1952

Beds No.	January	Feb.	March	April	May	June	July	August	Sep	Oct.	Nov	Dec.	Remarks
1	...	Pr	Pr	Int	Int	Int	Int	Int	Pr	Int	Tr	Tr	
2	...	Pr	Pr	Int	Pr	Int	Int	Int	Pr	Int	Tr	Pr	
3	Pr	Int	Pr	...	Int	Pr	Pr	Pr	Tr	Tr	
4	...	Pr	...	Pr	Pr	...	Int	Int	Int	Pr	Tr	Tr	
5	...	Int	Pr	Pr	Pr	Int	Int	Int	Pr	Int	Tr	Pr	
6	Pr	Pr	Pr	Int	Int	Int	Pr	Pr	Present	Tr	
7	...	Int	Pr	Int	Int	Int	Int	Int	Pr	Pr	Pr	Tr	
8	Pr	Pr	Int	Int	Int	Int	Pr	Int	Pr	Pr	
9	...	Pr	Pr	Int	Pr	Int	Int	Int	Int	Pr	Int	Pr	
10	...	Pr	Int	Pr	Pr	Int	Int	Int	Int	Int	Trace	Tr	
11	...	Pr	Pr	Int	Pr	Int	Pr	Pr	Int	Pr	Trace	Tr	
12	...	Pr	Int	Pr	Pr	Int	Pr	Int	Int	Pr	Trace	Tr	
13	...	Int	Pr	Int	Pr	Int	Int	Pr	Pr	Int	Tr	Tr	
14	...	Int	Int	Pr	Int	Int	Int	Pr	Pr	Int	Tr	Pr	
15	...	Int	Int	Pr	Pr	Pr	Int	Int	Int	Pr	Tr	Pr	
16	Int	Int	Int	Int	Int	Int	Pr	Pr	Pr	Int	
17	Int	Int	Int	Int	Int	Int	Pr	Int	Pr	Tr	

Pr=Present Int=Intense Tr=Trace

TABLE XII

Some Important Physical, Chemical and Bacteriological conditions in Chlorinated Filtered Water in 1952
(Results expressed in parts per 100,000.)

Months.	No. of Sam- ples	Smell	Ammoniacal Nitrogen	Albuminoid Nitrogen	Absorbed Oxygen	Nitrates	Nitrites	Total Solids	Total Hard- ness.	% Samples showing Lactose fermenters in							
										No. of Sam- ples.	60 cc	+ 60 cc	+ 20 cc	+ 10 cc	+ 5 cc	+ 1 cc	+ 0.1 cc
January	20	Nil	0.001	0.030	0.191	M. Tr.	Nil	...	...	20	100	Nil	Nil	Nil	Nil	Nil	...
February	21	Nil	Trace	0.034	0.195	Nil	Nil	...	...	21	100	Nil	Nil	Nil	Nil	Nil	...
March	24	Nil	0.002	0.030	0.198	Nil	M. Tr.	...	...	24	Nil	56	4	13	25	Nil	...
April	23	Nil	0.001	0.043	0.260	Nil	Nil	...	...	20	90	10	Nil	Nil	Nil	Nil	...
May	26	Nil	0.014	0.047	0.250	Nil	Mtr.	...	...	26	74	19	7	Nil	Nil	Nil	...
June	24	Nil	0.007	0.031	0.138	Trace	Nil	...	...	24	92	8	Nil	Nil	Nil	Nil	...
July	25	Nil	0.027	0.058	0.200	Nil	Nil	...	8.2	18	100	Nil	Nil	Nil	Nil	Nil	...
August	23	Nil	0.029	0.056	0.193	Nil	Nil	21.6	8.5	18	94	Nil	Nil	Nil	6	Nil	...
September	18	Nil	0.049	0.059	0.270	Nil	Nil	...	9.9	15	33	27	13	13	7	7	...
October	24	Nil	0.051	0.052	0.266	Nil	M Tr.	...	8.8	24	36	8	4	8	4	40	...
November	24	Nil	0.029	0.038	0.191	Nil	Nil	...	8.5	25	84	8	8	Nil	Nil	Nil	...
December	23	Chori- nous	0.014	0.036	0.148	M. Tr.	Tr.	...	8.1	21	63	23	14	Nil	Nil	Nil	...

TABLE XIII
Chemical and Bacteriological Conditions of the Test Tap Water in 1952
(Results expressed in parts per 100,000)

Months	No. of sam- ples	Smell	Ammoniacal Nitrogen	Albuminoid Nitrogen	Absorbed Oxygen	Nitrates	Nitrites	Total Solids	Total Hard- ness	No. of sam- ples	% Samples showing Lactose fermenters in						
											- 60 cc	+ 60 cc	+ 70 cc	+ 10 cc	+ 5 cc	+ 1 cc	+ 1 cc
January	20	Nil	0.001	0.031	0.193	M Tr	Tr	22.6	...	20	100	Nil	Nil	Nil	Nil	Nil	...
February	21	Nil	Trace	0.030	0.192	M Tr	M Tr	22.8	6.2	21	100	Nil	Nil	Nil	Nil	Nil	...
March	24	Nil	0.002	0.033	0.199	Nil	M Tr	26.0	9.8	24	75	25	Nil	Nil	Nil	Nil	...
April	23	Nil	0.002	0.047	0.260	M Tr	Nil	26.0	...	20	100	Nil	Nil	Nil	Nil	Nil	...
May	26	Nil	0.011	0.037	0.176	M Tr	M Tr	...	...	26	93	7	Nil	Nil	Nil	Nil	...
June	24	Nil	0.005	0.031	0.124	M Tr	Nil	34.5	...	24	100	Nil	Nil	Nil	Nil	Nil	...
July	25	Nil	0.026	0.048	0.192	M Tr	Nil	20.6	8.2	18	100	Nil	Nil	Nil	Nil	Nil	...
August	23	Nil	0.030	0.064	0.186	Nil	M Tr	33.4	8.8	18	83	6	Nil	Nil	11	Nil	...
September	18	Nil	0.051	0.061	0.227	Nil	M Tr	18.7	9.6	15	7	20	13	Nil	40	20	...
October	24	Nil	0.046	0.056	0.239	Nil	Tr	23.4	9.1	24	25	8	4	20	8	35	...
November	24	Nil	0.027	0.041	0.184	Nil	M Tr	25.3	8.6	25	92	8	Nil	Nil	Nil	Nil	...
December	23	Nil	0.010	0.044	0.128	M Tr	M Tr	...	8.1	21	90	10	Nil	Nil	Nil	Nil	...

TABLE XIV
Kortalayar River Distribution System—Results of Bacteriological Examination 1952

Months.	High Pressure areas							Low pressure areas						
	No. of Sam- ples.	Lactose fermenters in %						No. of Sam- ples.	Lactose fermenters in %					
		— 60 C C	+ 60 C C	+ 20 C C	+ 10 C C	+ 5 C C	+ 1.0 C C	+ 0.1 C C						
January 1952...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
February " ...	10	70	Nil	30	Nil	Nil	Nil	...	34	Nil	Nil	Nil	66	...
March " ...	...	...	...	...	...	...	...	...	50	Nil	10	10	10	...
April " ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May " ...	...	...	...	...	...	...	...	...	70	Nil	Nil	Nil	Nil	...
June " ...	14	72	7	14	7	Nil	Nil	109	27	21	23	16	12	...
July " ...	20	80	Nil	Nil	Nil	Nil	20	94	70	6	10	2	6	...
August " ...	29	Nil	20	30	20	30	Nil	134	15	24	10	14	11	...
September " ...	10	Nil	Nil	Nil	20	50	30	56	9	9	16	43	19	...
October " ...	2	Nil	Nil	Nil	Nil	Nil	100	38	5	10	Nil	5	71	...
November " ...	20	35	55	10	Nil	Nil	Nil	100	44	30	17	6	2	...
December " ...	14	70	30	Nil	Nil	Nil	Nil	102	10	48	18	15	6	...

TABLE XVI

Kortalayar river Distribution system—Booster Areas, Results of
Bacteriological Examination—1952

Booster areas									
Months		No of Samples	Lactose Fermenters in %						
			— 60 c. c.	+ 60 c. c.	+ 20 c. c.	+ 10 c. c.	+ 5 c. c.	+ 1 c. c.	+ 0.1 c. c.
June	52	4	Nil	Nil	50	Nil	Nil	50	...
July	52	8	62	Nil	Nil	Nil	25	13	...
August	52	8	50	Nil	Nil	Nil	Nil	50	...
September	„	4	Nil	Nil	Nil	100	Nil	Nil	...
October	„	3	Nil	Nil	34	Nil	33	33	...
November	„	10	60	20	10	10	Nil	Nil	...
December	„	14	Nil	56	33	11	Nil	Nil	...

TABLE XVII

Kortalyar River Distribution System—Booster Areas
Results of Chemical Examination in 1952.

Month.				Samples collected from taps in the Booster areas									
				Results expressed in parts per 100,000									
				No. of Samples	Smell	Ammoniacal Nitrogen	Albuminoid Nitrogen	Nitrous Nitrogen	Nitric Nitrogen	Chlorides	Oxygen Absorbed	P.H.	Total Hardness	Total Solids
January	1952	...	...	...	...	...	...	...	...	...	...	...	...
February	"	...	...	...	...	...	...	...	...	...	...	...	...
March	"	...	...	...	...	...	...	...	...	...	...	...	...
April	"	...	...	...	...	...	...	...	...	...	...	...	...
May	"	...	...	...	...	...	...	...	...	...	...	...	...
June	"	...	7	Nil	0.002	0.015	M. Tr.	M. Tr.	...	0.128	7.6	8.4	37.2
July	"	...	8	Nil	0.006	0.027	Trace	Present	...	0.184	7.3	7.6	28.0
August	"	...	8	Nil	0.015	0.036	Trace	Trace	2.9	0.146	7.4	9.4	...
September	"	...	4	Nil	0.048	0.034	M. Tr.	Nil	2.6	0.238	7.1	8.9	32.4
October	"	...	3	Nil	0.021	0.048	Trace	Trace	9.8	0.170	7.2	12.2	45.6
November	"	...	11	Nil	0.004	0.035	Trace	Trace	3.2	0.163	7.5	9.6	28.1
December	"	...	14	Nil	Nil	0.020	M. Tr.	M. Tr.	3.3	0.149	7.4	7.8	...

M Tr.— Minute trace

TABLE XVIII

Quantity of Water Supplied in gallons from Richards Park
Well and from Saidapet & Sembium Infiltration Galleries in 1952

Month	Richards park	Saidapet	Sembium
January	2,47,630	12,06,000	10,65,000
February	2,30,590	13,75,800	8,95 000
March	2,22,920	15,35,000	9,40,000
April	2,28,250	14,29,400	9,00,000
May	2,22,890	15,01,600	9,20,000
June	2,46,800	18,72,600	11,42,500
July	2,52,890	19,10,000	12,45,000
August	2,35,760	23,26,100	12,58,000
September	2,35,460	24,00,000	12,22,000
October	2,43,620	25,42,000	12,48,000
November	2,51,560	24,00,000	11,73,000
December	2,72,940	27,32,500	12,15,300

TABLE XIX
Physico-Chemical and Bacteriological Conditions of the Infiltration Gallery at Sembium, 1952

Results expressed in parts per 100,000												
Date	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Colour and Turbidity	S Y & O	S Y & O	S Y & O	S Y & O	S Y & O	S, W & O	S W	C & C	C & C	...	C & C	...
Ammoniacal Nitrogen	Trace	0.001	0.001	0.002	0.002	0.003	0.001	...	Nil	...	Nil	...
Albuminoid Nitrogen	0.001	0.001	Trace	0.001	Trace	0.001	0.001	...	Trace	...	Nil	...
Nitrous Nitrogen	Nil	Nil	Nil	Nil	Nil	M Tr	M Tr	Nil	Nil	...	Nil	...
Nitric Nitrogen	M Tr	M Tr	M Tr	Nil	Nil	M Tr	M Tr	...	M Tr	...	Nil	...
Oxygen Absorbed (Tidy's 4 Hrs).	0.090	0.075	0.100	0.069	0.062	0.062	0.076	0.048	0.145	...	0.126	...
P. H.	6.9	7.0	7.0	7.2	6.9	6.9	7.0	6.8	7.0	...	...	...
Chlorides	9.8	10.1	11.7	13.1	15.5	7.5	11.0	7.6	8.4	...	10.5	...
Alkalinity to { Phenolphthalein... Methyl Orange ...	—1.0	—1.2	—1.4	...	—0.9	—0.9	—1.5	—2.15	—1.4	...	...	...
Total Solids	34.2	38.4	34.1	38.65	40.1	42.6	38.4	...	37.2	...	31.2	...
Hardness (Total)	15.8	34.0	17.8	12.3	15.5	8.0	9.0	11.0	14.0	...	12.5	...
Iron	0.025	0.030	0.028	0.056	0.020	0.040	0.016	...	0.050	...	...	...
Bacteriological results: % samples showing presence of B. Coli in 5.0 c.c. volumes	...	...	...	...	Nil	...	...	Nil	100%	...	50%	...
	S Y & O—Slightly yellowish and opaque				S W & O—Slightly whitish and opaque							
	H S W—Slightly whitish				C & C—Colourless and clear							

S Y & O—Slightly yellowish and opaque
H S W—Slightly whitish
S W & O—Slightly whitish and opaque
C & C—Colourless and clear

TABLE XX

Physico—Chemical and Bacteriological Conditions of the Infiltration Gallery at Saidapet in 1952

Date	Results expressed in parts per 100·000											
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Colour & Transparency	...	C & C	C & C	C & C	C & C	C & C	C & C	C & C	C & C	C & C	C & C	C & C
Ammoniacal Nitrogen	...	Nil	0·002	Nil	Trace	Nil	Nil	Nil	Nil	Nil	Nil	0·003
Albuminoid Nitrogen	...	0·0002	0·002	0·002	do	Nil	Nil	Nil	Trace	Trace	Trace	0·014
Nitrous Nitrogen	...	Trace	Trace	Nil	do	Trace	Trace	Nil	Nil	do	Nil	Nil
Nitric Nitrogen	...	Present	Present	Present	Present	Present	Present	Trace	Present	do	Present	Trace
Oxygen absorbed (Tidy's 4 Hrs.)	0·080	0·090	0·098	0·66	0·063	0·044	0·039	0·060	0·081	0·064	0·105	0·086
To Phenolphthalen	—1·5	—1·5	—2·1	...	—1·3	—1·1	—1·3	—2·1	—2·1	—0·96	...	—0·07
Alkalinity to Methyl Orange	18·0	21·0	20·0	...	14·2	12·4	12·5	16·1	14·9	16·7	...	14·5
P.H.	7·4	7·3	7·3	7·3	7·3	7·4	7·2	7·4	...	...	7·5	7·8
Chlorides	25·2	26·0	23·6	22·6	21·2	16·8	15·0	20·3	21·0	20·5	21·5	13·5
Total hardness	47·0	56·5	31·5	21·2	25·0	21·0	19·2	27·8	23·0	21·0	26·4	22·0
Total Solids	78·6	75·0	66·6	64·5	64·0	56·7	70·8	105·8	75·6	64·0	75·9	49·0
Percentage of Samples showing the presence of B. Coli in 5 c.c. volumes	...	...	...	...	...	100%	...	Nil	Nil	100	100%	...

TABLE XXI

Infiltration Gallery System—Sembium and Saidapet distribution Systems—
Results of Bacteriological Examination, 1952.

Months	Sembiam distribution System %								Saidapet distribution System %							
	No. of Samples.	Lactose fermenters in							No. of Samples.	Lactose fermenters in						
		— 60 c. c.	+ 60 c. c.	+ 20 c. c.	+ 10 c. c.	+ 5 c. c.	+ 1.0 c. c.	+ 0.1 c. c.		— 60 c. c.	+ 60 c. c.	+ 20 c. c.	+ 10 c. c.	+ 5 c. c.	+ 1.0 c. c.	+ 0.1 c. c.
June 52	...	10	100	...	...	...	...	...	10	40	10	20	Nil	Nil	30	...
July 52	...	10	100	...	...	...	...	...	...	...	...	...	...	...	...	...
August 52	...	2	Nil	50	Nil	Nil	50	Nil	10	Nil	Nil	40	20	40	Nil	...
September 52
October 52
November 52	...	20	50	35	Nil	Nil	Nil	10	10	40	30	10	10	10	Nil	...
December 52

TABLE XXII

Infiltration Gallery System—Results of Chemical Examination 1952 (Expressed in Partsper 100,000)

APPENDIX

[illegible]

Table XX.V

Summarised report on the Sterilisation of Water

Serial No.	Place	Period	Length of pipe line Sterilised	Total lbs. of chlorine injected	Residual chlorine in p.p.m.		Before Sterilisation					Bactl.
					Average	Highest recorded	Chemical Results expressed in Parts per 100,000					% of Samples where B. coli are absent in 60 c.c.
							Ammoniacal Nitrogen	Albuminoid Nitrogen	Absorbed Oxygen	Iron	Phosphate	
Main												
1	Railway Officers quarters Mount Road	1-1-52 to 7-1-52	5 furlongs	49	5.2	22.0	0.001	0.026	0.153	0.016	0.002	50
2	Southern end of Cathedral Road	8-1-52 to 30-3-52 (32 days)	4 furlongs	886.5	Samples could not be collected as there							
3	Junction of Edward Elliotts Road & Royapettah High Road	31-3-52 to 30-4-52 (26 days)	1½ Mile	725.5	Samples could not be collected as there							
Main												
4	Kilpauk Shaft ...	1-5-52 to 18-5-52 (16 days)	1 Mile	383	Samples could not be collected as there							
5	Konoor High Road	19-5-52 to 30-5-52 (10 days)	½ Mile	272	Nil	Nil	0.030	0.023	0.190	0.048	0.002	100
6	Junction of Stephenson Road and Cooks Road	1-6-52 to 16-6-52 (13 days)	½ Mile	228	4.8	10.0	0.002	0.025	0.132	0.023	Trace	86.6
7	Jamalia House Perambur High Road	17-6-52 to 6-7-52 (16 days)	1½ furlongs	490	6.4	15.5	0.005	0.038	0.191	0.017	0.001	70
8	Western end of Decosta Road Perambur	7-7-52 to 18-7-52 (11 days)	1½ furlongs	292	2.9	10.0	0.069	0.043	0.173	0.017	Nil	50
9	Basin Bridge Road	5-8-52 to 5-9-52 (27 days)	1 furlongs	800	6.0	30.0	0.032	0.067	0.194	0.045	0.002	3
10	Near Fire Station Basin Bridge Road	7-9-52 to 24-9-52 (13 days)	3 furlongs	291	9.25	45.0	0.048	0.062	0.226	0.097	Nil	60
11	Near Krishna Talkies	2-10-52 to 7-10-52 (5 days)	4 furlongs	44.5	30.7	66.0	0.057	0.056	0.218	0.060	0.001	0
12	At the Junction of Tiruvottiyur High Road and Dr. Vijayaragavachari Road	8-10-52 to 6-11-52 (13 days)	1 furlongs	344	23	29.8	0.019	0.035	0.241	0.047	0.007	0
13	At Thiruvottiyur High Road 1½ furlongs away from the previous spot	8-12-52 to 30-12-52 (19 days)	1½ furlongs	286	2.0	2.0	Trace	0.036	0.154	0.015	0.008	0

Mains from 1st January 1952 to 30-12-52

WATER ANALYSIS

After Sterilisation					Bactl. % of samples where B. Coli are absent in 60 c.c.	% of reduction or increase in Ammonical nitrogen content in the treated samples as compared with that of untreated samples	% of reduction or increase in Albuminoid nitrogen content in the treated samples as compared with that of untreated samples	% of reduction or increase in Iron content in the treated samples as compared with that of untreated samples
Ammoniacal Nitrogen	Albuminoid Nitrogen	Absorbed Oxygen	Iron	Phosphate				
Chemical results Expressed in parts per 100,000								
No. 7.								
0.001	0.020	0.168	0.013	0.003	72	Nil	+ 15.5	- 19
were no hydrants and public fountains on the main under treatment.								
were no hydrants and public fountains on the main under treatment.								
No. 2.								
were no public fountains on the main under treatment.								
0.024	0.013	0.158	0.044	0.003	100	- 20	43.5	- 16
0.002	0.004	0.119	0.026	Trace	100	Nil	- 4	+ 15
0.007	0.023	0.162	0.048	0.001	100	+ 40	- 39	+ 65.8
0.008	0.041	0.165	0.035	0.003	100	- 88	- 5	+ 50
0.027	0.039	0.146	0.083	0.006	100	- 16	- 42	+ 88
0.037	0.055	0.218	0.070	0.013	100	- 23	- 11	+ 75
0.019	0.042	0.219	0.102	0.015	89	- 67	- 25	+ 64
0.016	0.040	0.214	0.098	0.029	100	- 16	+ 14	+ 111
0.009	0.036	0.151	0.031	0.208	36	3 fold increase	+ 39	+ 100

A. Physical Conditions

B. Chemical Conditions

C. Bacteriological Conditions

B. Coli in ? c c

Description		25-7-52	28-8-52	30-9-52
A. Physical Conditions				
Time	...	10-40 a.m.	10-30 a.m.	10-0 a. m.
Depth	...	...	...	...
Colour & Transparency		c & c	c & e	c & c
Temperature °c	...	31%	...	33%
B. Chemical Conditions				
Total Solids	...	32.4	36.4	40.4
Alkalinity	{ Phenolphthalein	—0.8	—0.8	—3.5
	{ Methyl Orange	11.2	10.5	10.5
P H	...	7.4	6.8	6.8
Dissolved Oxygen cc/L	...	2.1	1.7	3.5
% Satourtion	...	...	...	...
Chlorides	...	2.4	2.3	2.5
Oxygen Absorbed (Tidy's 4 ps)	...	0.063	0.086	0.069
Ammoniacal Nitrogen	...	0.001	nil	0.002
Albuminoid Nitrogen	...	0.002	0.002	0.024
Nitrous Nitrogen	...	Trace	nil	nil
Nitric Nitrogen	...	nil	nil	nil
Phosphates	...	0.030	...	nil
Silicates	...	1.5	...	2.2
Iron	...	0.080	0.400	1.0
Hardnesa	...	7.6	11.0	12.0
C. Bacteriological Conditions				
B. Coli in ? cc	...	+ 60	—60	+ 20

TABLE XXV
Emergency Water Supply - Wells connected to the City Distribution System—Chemical and Bacteriological Results
Monthly Averages for 1952

Wells at	January						February						March						April														
	No. of sample	Total Hardness	Chlorides	pH	Nitrates	% of 1st class samples	No. of samples	Total Hardness	Chlorides	pH	Nitrates	% of 1st class samples	No. of samples	Total Hardness	Chlorides	pH	Nitrates	% of 1st class samples	No. of samples	Total Hardness	Chlorides	pH	Nitrates	% of 1st class samples	No. of samples	Total Hardness	Chlorides	pH	Nitrates	% of 1st class samples			
Cherian Nagar	35	116.8	18.5	7.1	Int	86	49	119.2	19.5	7.7	Pr	Int	100	13	117.8	15.3	7.2	Int	33	12	76.0	16.0	7.2	Pr	Int	33	12	76.0	16.0	7.2	Pr	Int	50
Dhobikana	33	124.0	23.56	7.8	Int	100	50	122.0	23.4	8.2	Pr	Pr	95	10	120.2	21.0	8.0	Int	0	10	108.0	21.0	8.1	Int	Int	0	10	108.0	21.0	8.1	Int	Pr	20
I.D. Hospital	29	80.0	25.0	7.1	Int	100	38	82.4	34.1	7.2	Pr	Int	90	10	81.8	35.5	7.7	Pr	0	6	...	35.0	7.2	Pr	Int	0	6	...	35.0	7.2	Pr	Int	Nil
Poor House	33	116.8	26.7	7.7	Int	100	50	116.4	28.5	7.8	Int	Pr	100	11	115.2	26.0	7.8	Int	0	10	120.6	27.2	7.3	Int	Pr	0	10	120.6	27.2	7.3	Int	Pr	20
Palmyrah yard	4	141.6	47.0	7.6	Int	100	47	143.8	47.8	7.8	Int	Int	100	10	140.2	47.5	7.7	Int	0	6	202.8	53.0	7.7	Int	Int	0	6	202.8	53.0	7.7	Int	Int	Nil
Seven Wells com-pound A/1	4	84.8	24.1	7.4	Pr	100	37	83.2	24.6	7.6	Pr	Pr	100	10	85.6	25.0	7.8	Int	0	...	...	...	...	...	Int	0	...	...	...	...	...	...	...
Seven Well com-pound D/4	4	82.0	13.8	7.3	Int	100	35	84.4	16.5	7.3	Int	Pr	83	6	81.3	18.0	7.6	Int	0	...	...	...	...	...	Int	0	...	...	...	...	...	...	...
Damodarapuram Adyar	34	35.2	5.0	7.9	Tr	100	38	36.2	6.4	7.4	Int	Tr	100	2	37.1	5.6	7.8	Nil	100	4	30.4	7.5	7.8	Nil	Tr	100	4	30.4	7.5	7.8	Nil	Nil	100
Nagappier St.	...	...	...	...	...	29	86.4	22.9	7.7	7.7	Int	Pr	100	3	89.5	24.0	7.2	Int	0	4	89.5	23.0	7.2	Pr	Pr	0	4	89.5	23.0	7.2	Pr	Pr	50
C.G. Reddi's House	...	...	...	...	...	38	106.4	21.8	7.7	7.7	Pr	Pr	100	2	104.3	20.0	7.7	Int	0	4	104.0	20.0	7.7	Int	Pr	0	4	104.0	20.0	7.7	Int	Pr	Nil
Vasanthamandapam.	...	...	...	...	...	38	136.0	32.2	7.2	7.2	Tr	Pr	100	4	133.4	27.5	7.3	Pr	0	4	122.4	28.0	7.4	Tr	Pr	0	4	122.4	28.0	7.4	Tr	Pr	Nil
Sathyamurthy's Park	...	...	...	...	...	40	64.0	11.5	8.1	8.1	nTr	Tr	100	2	63.1	8.0	8.3	Pr	...	4	68.0	8.5	8.2	Tr	Tr	...	4	68.0	8.5	8.2	Tr	MTr	Nil
Seven Wells Play-ground	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	52.4	13.0	...	Tr	Pr	...	6	52.4	13.0	...	Tr	Pr	33

TABLE XXIV—contd.

WATER ANALYSIS

Wells at.	September							October							November							December						
	No. of samples	Chlorides	pH	Nitrates	% of 1st class sam- ples.	No. of samples	Total Hardness	Chlorides	pH	Nitrates	% of 1st class sam- ples	No. of Samples	Total Hardness	Chlorides	pH	Nitrates	% of 1st class Sam- ples	No. of Samples	Total Hardness	Chlorides	pH.	Nitrites	Nitrates	% of 1st class sam- ples				
Cherian Nagar	12	29.3	16.5	7.9	Int.	16	7	35.0	17.5	7.9	Pr	Int	6	35.0	20.0	7.5	Int	66	3	36.7	19.0	8.1	Tr	Int	33			
Dhobikana	8	25.2	22.8	8.2	Pr	...	2	23.0	21.0	8.4	Pr	Int	...	...	...	...	...	...	...	...	...	...	...	...	...
I.D. Hospital	6	43.7	34.3	7.9	Int	...	6	43.0	30.3	8.0	Tr	Int	4	40.0	36.5	7.7	Pr	25	2	39.0	27.5	7.8	Tr	Pr	0			
Poor House	12	35.7	20.7	7.9	Int.	...	8	37.5	24.0	7.8	Int	Int	4	43.0	27.0	7.4	Pr	50	2	43.0	34.5	7.7	Tr	Pr	50			
Palmyrah yard	10	67.4	115.6	7.8	Pr	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Seven Wells play- ground	10	22.4	15.4	7.8	Tr	20	8	25.0	15.0	8.0	Nil	Nil	5	20.5	14.5	7.8	Tr	40	4	24.0	12.2	7.9	Tr	Pr	100			
Old well at Damodara- puram, Adyar	6	17.0	6.7	8.3	Nil	100	2	16.0	5.0	8.1	M Tr	M Tr	1	19.0	5.0	7.4	M.Tr	50	5	19.4	7.8	7.9	Tr	Pr	40			
New well at Damo- darapuram, Adyar.	6	16.7	8.3	8.3	Tr	33	5	15.7	5.0	8.0	Pr	Pr	1	18.0	7.0	7.8	Int	100	5	19.0	7.0	7.8	Tr	Tr	40			
P. V. Koil Street	8	41.0	26.8	7.8	Pr	50	6	33.3	17.0	7.9	Tr	Int	1	32.0	21.0	7.8	Pr.	50	2	41.0	21.0	7.8	Tr	Int	...			

APPENDIX

Meenachiammenpet...	10	49.2	32.2	7.4	Pr	Int	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Old Slaughter House Road	8	43.0	19.8	7.6	Tr	Pr	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Marina well opposite Senate House	10	28.6	32.8	8.0	M Tr	Tr	80	2	30.0	38.0	8.4	Tr	100	5	27.7	40.5	7.9	Tr	100	3	30.3	38.0	8.1	Tr	100
Marina well opposite Bharath Scout	8	21.4	10.2	8.2	Tr	Tr	60	4	25.0	8.0	8.2	Pr	Pr	...	5	21.5	10.5	8.0	Pr	80	4	19.0	9.5	8.2	Tr
Marina well opposite Dr. Besant Road	5	65.0	129.0	8.4	Int	Tr	50	4	63.5	135.0	8.2	Int	Int	..	...	...	...	...	...	...	...	...	...	...	...
Marina well opposite Sukuvar Street	10	18.2	8.2	8.2	Nil	Pr	80	6	19.7	8.0	8.2	Nil	Pr	100	4	21.0	7.0	8.2	Nil	100	4	44.0	63.8	8.3	Pr
Marina well opposite Lloyds Road	7	39.3	32.0	8.5	Int	Tr	33	4	38.0	37.0	7.8	Int	Tr	...	5	32.5	33.5	8.0	Pr	100	3	62.3	95.0	8.3	Pr
Marina well opposite I.G's Office	5	17.3	4.2	8.3	M Tr	Pr	50	4	18.0	6.5	8.4	Tr	Pr	100	5	18.5	7.5	8.1	Tr	100	3	24.3	9.0	7.6	Tr
Temple well Nungambakkam	5	27.7	20.7	8.2	Tr	Pr	50	6	31.3	30.3	8.0	M Tr	Tr	...	2	23.0	52.0	8.1	M Tr	50	...	...	...	...	...
Park well Nungambakkam	5	68.0	45.3	7.7	Int	Tr	50	6	72.5	45.3	7.4	Int	Pr	...	2	65.0	42.0	7.0	Tr	50	...	...	...	...	...
Nageswara Iyer Street	3	13.5	6.0	8.2	Tr	Tr	...	2	19.0	5.0	8.4	M Tr	Tr	...	...	...	...	...	...	...	...	...	...	...	...
Seniammen Koil Street	12	29.5	17.0	7.8	M Tr	Pr	...	8	30.5	16.8	7.9	Pr	Pr	...	1	29.5	17.0	7.8	Pr	100	2	32.5	25.5	8.0	Tr
Solayappan Street	12	25.0	15.0	7.9	Pr	Pr	16	7	24.0	11.2	7.9	Pr	Pr	100	3	21.5	11.5	7.7	Pr	50	2	22.0	10.0	8.1	Tr
C.B.S. Kuppam	8	39.0	21.5	8.0	Pr	Int	50	4	40.5	21.0	7.7	Trace	Int	100	...	...	...	...	...	...	...	...	...	...	...
Nagappier Street	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	29.3	21.3	7.5	Pr	66	2	27.5	24.0	7.4	Pr
Kanniappa Nagar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	232.5	23.0	8.4	Pr	100

APPENDIX

CHILD WELFARE

Statement No. I

Showing the cases of Labour which came under the observation
of Child Welfare Scheme in 1952.

Number.	Centre.	How conducted.					Caste.		Re- marks	
		By Nurses of C.W.S.	Taken to Hospital.	Taken over after Barber Women conducted.	Maternity ward.	Total.	Non-Muslims.	Muslims.	Twins.	Still births.
1	Todiarpur ...	218	40	37	1168	1463	1409	54	12	41
2	Royapuram ...	505	39	37	...	581	436	145	5	19
3	Palmyrah Kup- pam ...	330	30	16	...	376	300	76	2	9
4	Washermanpet...	889	71	24	1358	2342	1847	495	15	80
5	Sanjivirayanpet.	439	80	22	1241	1782	1730	52	18	34
6	Georgc Town ...	334	30	6	636	1006	904	102	14	26
7	Muthialpet ...	749	20	14	...	783	577	206	7	27
8	Kothwal Bazaar.	311	39	4	493	847	646	201	12	27
9	Treveleyen Basin	596	47	15	784	1442	1435	7	12	36
10	Park Town ..	270	24	3	...	297	297	...	2	4
11	Maternity Home, Choolai ..	621	255	13	1174	2063	2032	31	17	50
12	Sembiam ...	680	141	50	575	1446	1339	107	14	48
13	North Perambur.	620	96	50	605	1371	1186	185	14	32
14	Pulianthope ...	961	161	88	997	2207	1780	427	22	86
15	Purasawalkam...	746	65	37	848	1696	1632	64	13	47
16	Kilpauk ...	224	35	19	435	713	687	26	3	15
17	Chetpet. ...	277	58	21	557	913	893	20	12	31
18	Egmore ...	747	39	18	...	804	156	648	10	16
19	Saidapet ...	388	148	6	1388	1930	1878	52	8	51
20	Periamet ...	279	43	3	356	681	615	66	5	12
21	Kodambakkam ...	308	59	7	204	578	558	20	5	22
22	Triplicane ...	845	48	15	791	1699	1095	604	12	34
23	Mirsahibpet ...	851	24	13	...	888	520	368	6	16
24	Mylapore ...	773	38	7	...	818	100	718	7	25
25	Royapetah ...	530	18	2	...	550	445	105	1	14
26	Mandavalli ...	537	27	6	...	570	563	7	6	15
27	Adyar ...	164	22	13	372	578	573	5	1	13
28	Thyagaraya Nagar ...	425	13	11	...	449	446	3	3	10
29	Teynampet ...	580	29	5	...	64	592	22	6	14
30	Ayanavaram ...	668	64	45	...	777	727	50	4	26
		15865	1810	607	13982	32264	27398	4866	268	880

CHILD WELFARE

STATEMENT No. II

Showing the number of visits paid by the Staff of
Child Welfare Scheme in 1952.

No.	Centre.	Visits paid by			Total.
		Midwives.	Health Visito s.	Lady Dcctors.	
1	Tondiarpet	9202	3908	1188	14298
2	Royapuram	6465	2986	1194	10645
3	Palmyrah Kuppam	4917	3808	925	9650
4	Washermanpet	14987	6200	1076	22263
5	Sanjiviroyanpet	10486	4916	1229	16631
6	George Town	11764	4917	1075	17756
7	Muthialpet	8773	3602	1165	13540
8	Kothwal Bazaar	5252	2976	944	9172
9	Treveleyen Basin	10966	4823	752	16541
10	Park Town	5318	3576	1065	9959
11	Maternity Home Choolai	13314	4134	988	18436
12	Sembiam	15564	5533	740	21837
13	North Perambur	9181	2316	1078	12575
14	Pulianthope	17078	6858	1191	25127
15	Purasawalkam	13133	6672	1043	20848
16	Kilpauk	4080	3268	1319	8667
17	Chetpet	6562	3823	1182	11567
18	Egmore	8008	4475	1058	13541
19	Saidapet	12786	5449	996	19231
20	Periamet	6526	3329	942	10797
21	Kodambakam	5648	1355	375	7378
22	Triplicane	13269	6571	1252	21092
23	Mirsahibpet	9815	5867	1248	16930
24	Mylapore	8432	3620	752	12813
25	Royapetah	6702	3256	905	10863
26	Mandavalli	5457	3884	1020	10361
27	Adyar	4358	3811	1115	9284
28	Thyagaroya Nagar	4344	1628	272	6244
29	Teynampet	6015	1892	215	8122
30	Ayanavaram	7798	659	—	8457
Total		266200	120121	28304	414625

CHILD WELFARE

Statement No. III

Showing the No. of Pre-natal cases registered and the No. of booked cases in 1952

No.	Centre	No. of Pre-natal cases registered	No. of booked cases which attended the Ante-natal clinic	Cases not confined but brought over to account in the next year
1	Tondiarpet	1626	1525	184
2	Royapuram	1335	1290	162
3	Palmyrah Kuppam	823	266	111
4	Washermanpet	2930	2918	188
5	Sanjiviroyanpet	1768	1762	201
6	George Town	1340	1340	121
7	Muthialpet	1313	1297	164
8	Kothwal Bazaar	1028	942	113
9	Treveleyan Basin	1632	1601	193
10	Park Town	667	665	62
11	Maternity Home	2314	2314	260
12	Sembium	1537	1487	111
13	North Perambur	1532	1532	32
14	Pulianthope	2529	2516	356
15	Purasawalkam	2144	2117	68
16	Kilpauk	842	841	74
17	Chetpat	1242	1204	102
18	Egmore	1550	1515	98
19	Saidapet	2104	2071	178
20	Periamet	915	892	98
21	Kodambakkam	646	638	116
22	Triplicane	2184	2119	181
23	Mirsahibpet	1645	1574	109
24	Mylapore	1356	1350	107
25	Royapetah	1023	1019	79
26	Mandavalli	1066	1056	150
27	Adyar	679	671	41
28	Thyagaroyanagar	492	475	56
29	Teynampet	798	789	69
30	Ayanavaram	1144	1144	124
		42208	41430	3908

Serial number	Centre	Cardio-vascular diseases		Respiratory diseases		Alimentary Tract diseases			Diseases of urinary Tract			Toxaemia of Pregnancy			Deficiency diseases			Pyrexias		Debi- lity	Specific diseases					Other diseases & abnormalities of Pregnancy				Normal	Other diseases	Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		Valvular disease of the Heart (V.D.H.)	Hyper tension	Vericose Veins	Bronchitis	Pneumonia	Pulmonary Tuber- culosis	Asthama	Constipation	Dyspepsia	Diarrhoea	Dysentery	Scanty Micturition & Retention of urine	Albuminuria	Pyelitis	Pre-eclamptic Toxaemia	Eclampsia	Acute Yellow atrophy of the liver (Jaundice)	General Anasarca		Calcium deficiency	Vitamin deficiency	Other Nutritional deficiency	Influenzal	Malaria	Rheumatism	General debility (Emaciation)	Skin diseases	Ear, Nose, Throat				V. D. Syphilis	Gonorrhoea	Leucorrhoea	Morning Sickness	Anaemia	Hyperemios	Antepartum Haemorrhage	Breast abscess																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
1	Tondiarpet	...	2	...	3	...	4	1	...	5	13	...	7	13	1	4	28	...	11	18

CHILD WELFARE

Statement No. VI-A

Showing deaths among cases came under the treatment of Child Welfare Scheme, Private Doctors etc. during the year 1952.

No.	Centre.	Deaths among cases brought under care of C.W.S. but not under treatment.			Deaths among cases brought under care and treatment of C. W. S.	Total
		Unders Private Doctor	Under Vidians treatment.	In Hospital.		
1	Tondiarpet	...	1	4	...	5
2	Royapuram	...	...	2	...	2
3	Palmyrah Kuppam	...	...	...	...	...
4	Washermanpet	...	...	3	...	3
5	Sanjiviroyenpet	...	...	2	...	2
6	George Town	...	...	1	1	2
7	Muthialpet	4	...	3	...	7
8	Kothwal Bazaar	...	...	1	...	1
9	Treveleyen Basin	...	...	2	...	2
10	Park Town	...	...	...	...	...
11	Maternity Home, Choolai	...	...	6	...	6
12	Sembiam	...	...	2	...	2
13	North Perambur	...	...	...	...	...
14	Pulianthope	...	...	9	...	9
15	Furasawalkam	...	...	3	1	4
16	Kilpauk	...	...	1	...	1
17	Chetpet	...	...	...	...	...
18	Egmore	...	...	1	...	1
19	Saidapet	...	...	1	...	1
20	Periamet	...	...	2	...	2
21	Kodambakam	...	...	1	...	1
22	Triplicane	...	...	1	...	1
23	Mirsaibpet	...	...	...	...	...
24	Mylapore	...	...	3	...	3
25	Royapetah	...	...	...	...	...
26	Mandavalli	...	...	...	...	...
27	Adyar	...	...	...	...	...
28	T. Nagar	...	...	...	...	...
29	Teynampet	...	...	...	...	...
30	Ayanavaram	...	...	1	...	1
		4	1	49	2	56

Showing the causes of deaths among cases brought to the notice of C.W.S. during 1952 (vide Statement No. VI-A).

No.	Centre	Cardio Vascular diseases of Heart			Respiratory diseases		Alimentary diseases			Urinary Tract diseases		Toxæmias		Hæmorrhage					Shock				Infectious diseases				Puerperal Sepsis	Total
		Valvular diseases of Heart	Heart Failure	Anæmia	Pneumonia	Tuberculosis	Tubercular	Enteritis	Dysentery	Intestinal Obstruction	Renal Failure	Pre Eclamptic Toxæmia	Eclampsia	Accidental Hæmorrhage	Placenta Prævia	Intra & Post Partum Hæmorrhage	Retained Placenta	Obstetric shock	Shock due to Internal Manipulation	Post operative Shock	Ruptured Uterus	Typhoid	Meningitis	Other Fevers	Small Pox-measles, etc.			
1	Tondiarpet	1	..	..	..	..	..	..	..	..	..	..	1	1	..	..	1	1	..	..	1	..	..	..	..	1	5
2	Royapuram	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	1	..	..	..	..	..	2
3	Palmyrah Kuppam	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3
4	Washermanpet	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2
5	Sanjiviroyanpet	..	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	..	1	..	..	..	..	..	2
6	George Town	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
7	Muthialpet	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	7
8	Kothwal Bazaar	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
9	Trevelyan Basin	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
10	Park Town	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	6
11	Maternity Home, Choolai	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2
12	Sembiam	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2
13	North Perambur	..	..	..	..	..	..	..	..	..	..	2	..	..	..	1	..	..	..	1	..	..	..	1	..	..	9
14	Pulianthope	..	..	..	..	..	..	..	..	..	..	..	2	1	..	1	..	..	..	..	..	..	..	..	1	..	4
15	Purasawalkam	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	1
16	Kilpauk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
17	Chetpet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
18	Egmore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
19	Saidapet	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
20	Periamet	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
21	Kodambakkam	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
22	Triplicane	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
23	Mirshahibpet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
24	Mylapore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	3
25	Royapettah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
26	Mandavalli	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
27	Adyar	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
28	Thyagaraya Nagar	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
29	Teynampet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
30	Ayanavaram	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
		1	8	1	..	2	..	..	1	..	2	5	5	2	7	5	6	6	..	1	2	..	..	1	1	6	56

Showing Infants born in the year 1951 and kept under observation for a period of one year after birth.

No.	Centre	Total Number of Infants born in 1951	Number of still birth in 1951	Died within												Total number of deaths excluding still births	Left the city or otherwise not traceable	Said to be well	Out of division	No. of living children traceable in the city when one year old	No. of living children when one year old
				1 to 7 days		8 days to 1 month		2 to 3 months		4 to 6 months		7 to 9 months		10 to 12 months							
				Died	Not Traceable	Died	Not Traceable	Died	Not Traceable	Died	Not Traceable	Died	Not Traceable	Died	Not Traceable						
				Died	Not Traceable	Died	Not Traceable	Died	Not Traceable	Died	Not Traceable	Died	Not Traceable	Died	Not Traceable						
1	Tondiarpet	1180	27	23	2	5	1	6	2	22	2	13	2	80	9	16	139	909	1064		
2	Royapuram	545	17	15	...	2	13	1	13	2	24	2	15	2	83	14	59	...	431		
3	Palmyrah Kuppam	393	17	9	...	4	...	...	3	4	6	6	6	34	24	38	...	280	318
4	Washermenpet	2294	74	55	...	17	13	30	18	63	30	57	37	266	180	241	...	1533	1774		
5	Sanjiviroyanpet	1380	37	32	...	23	12	25	26	31	39	46	37	186	174	197	...	786	983		
6	George Town	1155	24	25	...	6	20	10	13	18	4	28	8	103	93	90	...	845	935		
7	Muthialpet	833	29	20	...	4	17	12	...	17	...	13	...	76	30	82	...	616	698		
8	Kothwal Bazaar	729	25	17	...	8	13	18	5	21	...	30	...	107	92	138	...	367	505		
9	Treveleyen Basin	1538	37	40	...	13	4	27	2	49	26	20	17	166	115	284	...	936	1220		
10	Park Town	334	11	8	...	5	...	5	...	4	3	9	9	40	24	12	...	247	259		
11	Maternity Home, Choolai	2103	47	41	...	46	32	37	8	45	76	38	39	237	347	350	...	1122	1472		
12	Sembiam	1335	55	38	...	15	1	14	1	25	3	34	1	162	84	96	102	836	1034		
13	North Perambur	1266	44	12	...	2	3	9	...	16	4	8	...	59	118	101	...	944	1045		
14	Pulianthope	1798	52	53	...	13	2	13	...	28	5	37	...	180	209	111	...	1246	1357		
15	Purasawalkam	1486	24	43	...	28	33	46	16	36	24	25	39	194	149	238	4	877	1119		
16	Kilpauk	652	25	16	...	12	3	16	2	17	1	7	...	74	18	35	...	500	535		
17	Chetpet	863	37	17	...	14	3	18	5	27	21	25	...	115	110	50	...	551	601		
18	Egmore	712	12	15	...	14	...	27	5	17	7	28	3	109	31	68	...	492	560		
19	Saidapet	1648	37	37	...	29	5	18	4	45	45	22	29	174	221	124	97	995	1216		
20	Periamet	667	10	24	...	6	1	7	2	5	4	22	8	81	24	94	...	458	552		
21	Kodambakkam	372	12	8	...	2	17	...	14	...	...	6	14	16	68	29	...	247	276
22	Triiplicane	1695	44	29	...	18	3	28	7	33	...	52	73	193	286	177	...	995	1172		
23	Mirsaibipet	812	13	15	...	4	1	1	...	14	7	11	12	49	27	36	...	687	723		
24	Mylapore	805	26	18	...	14	1	17	...	33	14	11	15	116	58	29	...	576	605		
25	Royapettah	578	15	8	...	4	1	9	...	30	18	18	3	87	19	34	...	423	457		
26	Mandavalli	590	18	14	...	6	...	6	...	9	6	5	...	52	33	19	...	468	487		
27	Adyar	468	20	12	...	4	...	...	...	6	...	9	...	28	15	8	70	327	405
28	Thyagaroyanagar	381	11	8	...	...	1	12	...	10	6	7	7	40	42	35	...	253	288
29	Teynampet	511	19	13	...	3	4	10	12	15	11	4	9	52	80	43	...	317	360		
30	Ayanavaram	738	19	35	...	13	...	8	...	24	...	35	...	132	92	71	...	424	495		
	Total	29861	838	706	501	326	170	443	152	673	416	651	430	3291	2786	2905	412	19629	22946		

Showing causes of deaths among infants born in 1951 and kept under observation during the 1st year of life.

No.	Centre.	Total number of Infants born in 1951.	No. of still births in 1951.	Neonatal deaths.			Cardio vascular diseases.		Respiratory diseases.			Alimen- tary diseases.			Septic condi- tion.		Specific diseases.		Diffici- ency diseases.		Pyrex- ias.		Infectious diseases.							Other diseases.							Total number of deaths excluding still births	Left the city or otherwise not traceable	Said to be well	Out of Division	No of living children traceable in the city when one year old	Number of living children when one year old																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
				Pre-maturity.	Asphyxia.	Birth Injury.	Congenital Pyloric stenosis	Congenital Heart Disease.	Anaemia.	Broncho-Pneumonia	Tuberculosis	Diphtheria	Whooping cough	Intestinal obstruction.	Diarrhoea.	Enteritis	Dysentery	Neptiritis	Tetanus	Pyæmic abscess	Skin diseases	Congenital Syphilis	Marasmus	Rickets	Scurvy	Malnutrition	Typhoid	Influenza	Malaria	Small-pox	Chicken-pox	Measles	Mumps	Cholera	Infantile biliary cirr- hosis	Debility							Accidents, bites & stings	Poisoning	Convulsion	Causes unknown																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
1	Tondiarpet	1180	27	18	5	5	24	3	...	1	20</

CHILD WELFARE

Statement No. IX

Showig the total number of Priority milk consumers from 1st January
to 31st December 1952.

No.	Centre	Number of Intants	Number of Toddlers	Total
1	Tondiarpet	110	...	110
2	Royapuram	111	...	111
3	Palmyrah Kuppam	106	...	106
4	Washermanpet	96	...	96
5	Sanjiviroyanpet	90	...	90
6	George Town	111	...	111
7	Muthialpet	100	...	100
8	Kothwal Bazaar	101	...	101
9	Treveleyen Basin	142	...	142
10	Park Town	82	...	82
11	Maternity Home Choolai	78	...	78
12	Sembiam	97	...	97
13	North Perambur	72	...	72
14	Pulianthope	135	...	135
15	Purasawalkam	83	...	88
16	Kilpauk	84	...	84
17	Chetpet	98	...	98
18	Egmore	92	...	92
19	Saidapet	114	...	114
20	Periamet	103	...	103
21	Kodambakam	40	...	40
22	Triplicane	76	...	76
23	Mlrsahibpet	86	...	86
24	Mylapore	91	...	91
25	Royapetah	91	...	91
26	Mandavalli	101	5	106
27	Adyar	73	8	81
28	T. Nagar	...	...	...
29	Teynampet	...	...	...
30	Ayanavaram	...	...	...
		2568	13	2581

Showing the total number of attendance of Expectant and Nursing mothers and Children at the out-patient clinics in 1953.

No	Centre	Attendance at clinics						Total New Attendance	Total old Attendance	Diseases treated—(New)										Grand Total	Total			
		Infants		Pre-School		Expectant Mothers				Nursing Mothers		Respiratory	Alimentary	Skin affection	Influenza	Ear and Eye diseases	Anaemia	Malaria	Vitamin deficiency			Normal	Other diseases	Total
		New	Old	New	Old	New	Old			New	Old													
1	Tondiarpet	2629	9161	2048	2878	1525	3424	3717	9770	35152	4851297	6311694	415	284	52	...	...	...	5061	9919	
2	Royapuram	1852	5541	1254	2148	1290	3178	2196	4981	22440	9421389	268	616	69	1757	69	298	1757	408	6592				
3	Palmyrah kuppam	1564	3697	1647	1609	766	1806	1677	2839	15605	939844	403	381	97	532	97	24	916	1375	5654				
4	Washermanpet	3830	14279	745	975	2918	4935	4243	12426	44351	20911816	1087	834	700	712	700	989	792	2057	11736				
5	Sanjiviroyanpet	3532	7034	2191	2462	1762	4374	3773	7096	32224	11161968	313	1351	226	389	226	293	577	4864	11258				
6	George Town	2662	7601	1475	2785	1340	4225	2920	8259	31267	10701045	168	590	9	461	391	96	...	4559	8397				
7	Muthialpet	1868	5808	774	1156	1297	3231	2168	6017	22259	8261117	129	394	44	199	52	7	532	2747	6047				
8	Kothawal Bazaar	2482	4864	1579	1902	942	3805	2690	5657	23921	2281715	263	401	73	558	389	66	837	2110	7693				
9	Treveyan Basin	3770	9554	1830	3604	1601	5349	4507	9339	39554	18413190	1192	1383	340	303	254	...	...	3205	11708		
10	Park Town	1024	2498	853	852	665	1653	1358	2662	11565	693896	190	600	42	174	13	144	485	663	3900				
11	Maternity Home																							
12	Choolai	3449	6009	1942	3421	2314	7896	3731	8652	37414	24131892	1088	2440	273	1185	122	165	268	1590	11436				
13	Sembiam	1928	3092	586	290	1487	2066	3269	3570	16288	23361400	702	1097	478	785	6	...	...	466	7270		
14	North Perambur	2598	6444	952	691	1532	2500	3562	282	24561	13861070	16	174	142	1362	215	...	304	3975	8644				
15	Pulianthope	3729	9258	2463	2041	2516	3152	5193	10139	39891	19845275	1337	2777	1070	974	10	255	...	919	14601				
16	Purasawalkam	4074	9647	2030	1500	2117	3162	4029	8846	35405	30502903	477	642	242	351	48	331	558	3648	12250				
17	Kilpauk	1820	5745	1409	1839	841	2637	2265	5423	21979	15291014	254	356	144	326	...	77	1710	925	6335				
18	Chetpet	2306	6727	1978	4111	1204	2692	2041	5573	26540	8501241	809	1328	460	476	6	667	683	1009	7529				
19	Egmore	1727	4934	910	1175	1515	2577	1870	4701	19409	16691643	171	703	52	219	27	244	1076	218	6022				
20	Saidapet	2746	8010	1065	1340	2071	11022	4248	12965	43467	9072602	101	515	37	898	32	694	2260	2024	10130				
21	Periamet	2106	4168	2224	2231	892	2322	2017	4451	20411	15271486	464	1306	182	17	357	118	571	1211	7239				
22	Kodambakkam	310	416	162	30	638	708	543	551	3358	122173	27	41	...	240	10	126	478	436	1653				
23	Triplicane	2846	8370	784	922	2119	4887	2775	7950	30653	11291251	422	901	174	889	187	670	2250	652	8524				
24	Mirsahebpet	2175	4975	1469	1935	1574	5558	1820	4624	24130	13011221	511	971	6	628	59	441	584	1316	7038				
25	Mylapore	1590	3971	904	1003	1350	2689	1835	13980	27322	11541096	233	667	63	664	3	130	522	1147	5679				
26	Royapettah	1566	7628	598	794	1019	2442	1525	3153	18725	12621065	210	571	13	317	5	313	260	692	4708				
27	Mandavalli	1598	3767	1290	1040	1056	2882	2245	4335	18213	901910	337	815	253	782	10	894	86	1201	6189				
28	Adyar	2109	3380	2103	2205	671	2972	2140	4180	19760	13431040	653	758	408	271	6	1401	168	975	7023				
29	Thyagarayanagar	...	...	...	...	475	40	...	...	515	14	43	1	...	10	...	17	292	97	475
30	Teynampet	...	...	...	...	789	38	...	...	827	30	96	1	...	37	...	49	398	174	789
30	Ayanavaram	680	4042	...	...	1144	1462	721	3943	11992	616404	316	604	300	198	...	...	...	107	2545
		64570	171320	37265	46939	41430	99592	75718	182364	719198	37865	42102	12777	24912	6320	14956	3346	8509	18364	49831	218983			

Annual Return - Maternity and Child Welfare - from 1st January to 31st December 1951

APPENDIX

No.	Centre	Brought under care					Home Visits					Clinics						Maternal Mortality	Morbidity and Morbidity						
		Maternity cases					Medical Office					Health Visits			Midwives					Attendance					
		Total Number of Mothers	Ante-Natal	Labour	Infants	Pre-School	Women	A. N.	P. N.	Infants	Toddlers	A. N.	P. N.	No. Held	Ante-Natal	No. Held	Infants			No. Held	Pre School	No. Held	Nursing Mothers		
1	Tondiarpet	1626	1525	1463	1-22	1064	1188	983	919	8	948	1602	7600	157	4949	11790	155	4926	155	13487	5	169			
2	Royapuram	1335	1290	581	562	431	1194	607	99	1648	632	2155	4310	159	4468	7393	159	3402	159	7177	2	186			
3	Palmyrah Kuppam	823	766	376	367	318	925	685	282	2498	343	969	3948	159	2572	5261	159	3256	159	4516	..	138			
4	Washermanpet	2930	2918	2342	2262	1774	1071	1448	118	2582	2052	4393	10594	157	7853	18109	157	1720	157	16669	..	433			
5	Sanjiviroyanpet	1768	1762	1782	1748	983	1229	239	121	3730	826	3951	6535	314	6136	10566	314	4653	314	10869	2	780			
6	George Town	1340	1340	1006	980	935	1075	1007	1767	1252	891	1359	10405	156	5565	10263	313	4260	313	11179	2	661			
7	Muthialpet	1313	1297	783	756	698	1165	445	428	1973	756	1249	7524	161	4528	7676	149	1930	141	8125	7	376			
8	Kothawal Bazaar	1028	942	847	820	505	944	491	71	1820	594	1104	4148	157	4747	7346	157	3481	157	8347	1	127			
9	Treveyayan Basin	1632	1601	1442	1406	1220	752	582	146	2925	1170	2723	8243	156	6950	13324	356	5434	356	13846	2	201			
10	Park Town	667	667	297	293	259	1065	678	96	2453	349	1628	3690	156	2318	3522	157	1705	157	4020	..	164			
11	Maternity Home																								
	Choolai	2314	2314	2063	2013	1472	988	225	105	2408	1396	3085	10229	312	10210	9458	312	5362	312	12383	6	1030			
12	Sembiam	1537	1487	1446	1398	1034	740	786	82	3527	1138	2399	13165	160	3553	5020	44	876	22	6839	2	740			
13	North Perambur	1532	1532	1371	1339	1045	1078	164	6	1141	1005	1945	7236	156	4032	9042	156	1643	155	9844	..	170			
14	Pulianthope	2529	2516	2207	2121	1357	1191	184	111	496	1597	2726	14352	155	5668	13687	157	4504	157	16032	9	624			
15	Purasawalkam	2144	2117	1696	1649	1119	1043	319	200	4974	1179	1956	11177	167	5279	13721	135	3530	114	12875	4	190			
16	Kilpauk	842	841	713	698	535	1319	327	98	2321	522	603	3477	157	3478	7565	157	3248	157	7688	1	70			
17	Chetpet	1246	1204	913	882	601	1182	336	89	2735	663	1771	4791	157	3804	9033	156	6089	156	7614	..	184			
18	Egmore	1550	1515	804	788	560	1058	712	165	2966	632	1019	6989	156	4092	6661	158	2085	158	6571	1	224			
19	Saidapet	2104	2071	1930	1879	1216	996	549	372	3540	988	2384	10422	157	13093	10756	157	2405	157	17213	1	947			
20	Periamet	915	892	681	669	552	942	508	107	2078	636	2482	4044	157	3214	6274	52	4455	52	6468	2	686			
21	Kodambakkam	646	638	578	556	276	375	135	175	786	259	1225	4423	95	1346	726	40	192	23	1094	1	186			
22	Triplicane	2184	2119	1699	1665	1172	1252	776	152	4263	1380	2474	10795	157	7006	11216	157	1706	157	10725	1	511			
23	Mirsaibipet	1645	1574	888	872	723	1248	517	234	4244	872	1585	8230	157	7132	7150	156	3404	156	6444	..	217			
24	Mylapore	1356	1350	818	793	605	752	258	64	2621	686	1403	7029	157	4039	5561	156	1907	156	15815	3	386			
25	Royapetah	1023	1015	550	536	457	905	838	45	1863	510	1242	5460	158	3461	9194	103	1393	52	4678	..	309			
26	Mandavalli	1066	1056	570	555	487	1020	531	188	2723	442	450	5007	156	3938	5365	155	2330	158	6580	..	314			
27	Adyar	679	671	578	565	405	1115	79	46	3383	303	1447	2911	158	3643	5489	103	4308	52	6320	..	223			
28	Thyagaroyanagar	492	475	449	439	288	272	190	126	969	343	965	3379	311	515	..	..	..	..	..	..	99
29	Teynampet	798	785	614	600	360	215	302	133	1109	348	1027	4988	87	827	..	..	..	..	..	..	148
30	Ayanavaram	1144	1144	777	751	495	..	..	2	376	281	1759	6039	105	2606	4722	209	..	209	4664	1	152	
		42208	41432	32264	31384	22946	28304	14901	5637	75842	23741	55060	211140	4730	141022	235890	4639	84204	4521	258082	56	10645			

CHILD WELFARE.

Statement showing the number of labour cases conducted by the Child Welfare Scheme, Infant mortality rate and Maternal mortality rate from 1940 to 1952.

Year	No. of labour cases conducted by C.W. S., C.M.	Infant Mortality rate (per 1000) of C.W.S.	Maternal mortality rate (per 1000) of C.W.S.
1940	14,489	136.2	2.5
1941	14,984	121.9	2.6
1942	8,390	157.8	3.6
1943	11,236	150.9	2.4
1944	10,591	140.6	2.2
1945	14,002	141.9	1.57
1946	19,147	102.8	2.5
1947	18,412	81.7	1.95
1948	26,051	83.0	1.91
1949	28,129	74.4	2.31
1950	26,957	95.5	2.00
1951	29,861	123.1	1.90
1952	32,264	125.4	1.73

Statement showing number of births conducted in 1951 and the number of Infant mortality during the period of one year after birth among the principal communities.

Community	No. of births conducted	Number of infant deaths.
1. European	1	...
2. Anglo-Indians	49	4
3. Indian Christians	529	71
4. Muslims	3,618	490
5. Hindus	25,226	2,691
6. Others	438	35
Total	29,861	3,291

Statement showing the distributions of Infant deaths in the different age periods of one year after births.

1. Under 7 days	...	706
2. 8 days and under 1 month	...	326
3. 2 months and 3 months	...	443
4. 4 months and 6 months	...	673
5. 7 months and 9 months	...	651
6. 10 months and under 1 year	...	492

Total	...	3,291
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